

RAINTREE FOREST HEALTH PROJECT

Sierra Nevada Conservancy 2013 Proposition 84 Grant Program

SNC Reference# 783

Prepared for: Sierra Nevada Conservancy

Prepared by: El Dorado County Resource Conservation District

September 25, 2013

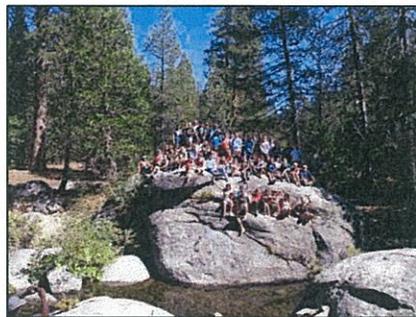
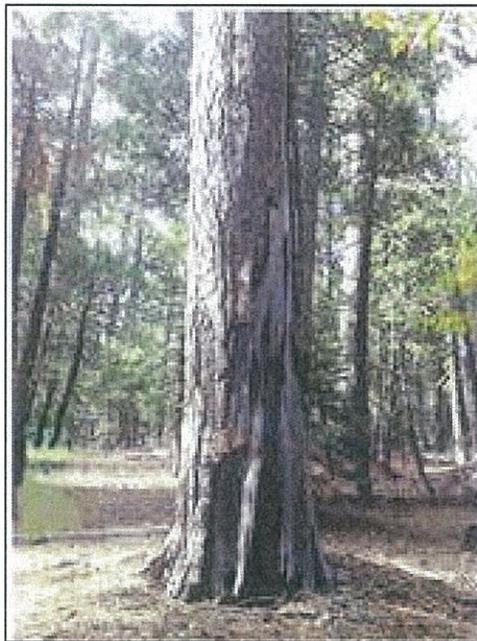


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El Dorado County Resource Conservation District
100 Forni Road, Suite A ● Placerville, CA 95667 ● Phone (530) 295-5630, Fax (530) 295-5635

RESOLUTION NO. 2012-02

**Of the Board of Directors of the
El Dorado County Resource Conservation District**

A Resolution Authorizing Development of the "Raintree Forest Health Project Grant Proposal" under the Sierra Nevada Conservancy Proposition 84 Grants Program.

WHEREAS, On November 7, 2006, California voters passed Proposition 84, the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coast Protection Bond Act of 2006. Proposition 84 includes \$54 million for the Sierra Nevada Conservancy (SNC) to distribute to eligible organizations for the protection and restoration of rivers, lakes and streams, their watersheds and associated land, water, and other natural resources; and

WHEREAS, the SNC has been delegated the responsibility for the administration of a portion of these funds through a local assistance grants program, establishing necessary procedures; and

WHEREAS, said procedures established by the Sierra Nevada Conservancy require a resolution certifying the approval of the *Raintree Forest Health Project* (Project) Application by the El Dorado County Resource Conservation District (District) governing board before submission of said application to the SNC; and

WHEREAS, the District, if selected, will enter into an agreement with the SNC to carry out the Project; and

WHEREAS, the District has identified the Project as valuable toward meeting its mission and goals; and

WHEREAS, the District has integrated the concepts of watershed protection through improving fire prevention and suppression, reducing hazardous fuels, restoring fire-adapted ecosystems, improving water quality, erosion and sediment control, education and promoting community assistance in its 2010-2015 Long-Range Strategic Plan;

WHEREAS, Division 9 of the PRC Sec. 9408 (b) states: Districts may cooperate with counties and cities on resource issues of local concern. It is the intent of the Legislature to encourage districts to facilitate cooperation among agencies of government to address resource issues of local concern; and

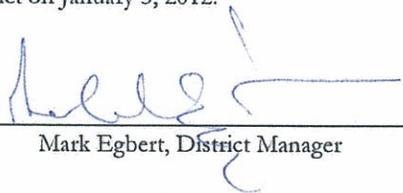
WHEREAS, Division 9 of the PRC Sec. 9409 states: The directors may make improvements or conduct operations on public lands, with the cooperation of the agency administering and having jurisdiction thereof, and on private lands, with the consent of the owners thereof, in furtherance of the prevention or control of soil erosion, water conservation and distribution, agricultural enhancement, wildlife enhancement, and erosion stabilization, including, but not limited to, terraces, ditches, levees, and dams or other structures, and the planting of trees, shrubs, grasses, or other vegetation; and

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the El Dorado County Resource Conservation District,

- 1) Approves the submittal of an application for the *Raintree Forest Health Project*; and

- 2) Certifies that the El Dorado County Resource Conservation District understands the assurances and certification requirements in the application; and
- 3) Certifies that the El Dorado County Resource Conservation District will have sufficient funds to operate and maintain the resource(s) consistent with the long-term benefits described in support of the application; or will secure the resources to do so; and
- 4) Certifies that the El Dorado County Resource Conservation District will comply with all legal requirements as determined during the application process; and
- 5) Appoints the District Manager of the District, as agent to conduct all negotiations, execute and submit all documents, including but not limited to: applications, agreements, payment requests, and so on, which may be necessary for the completion of the aforementioned project.

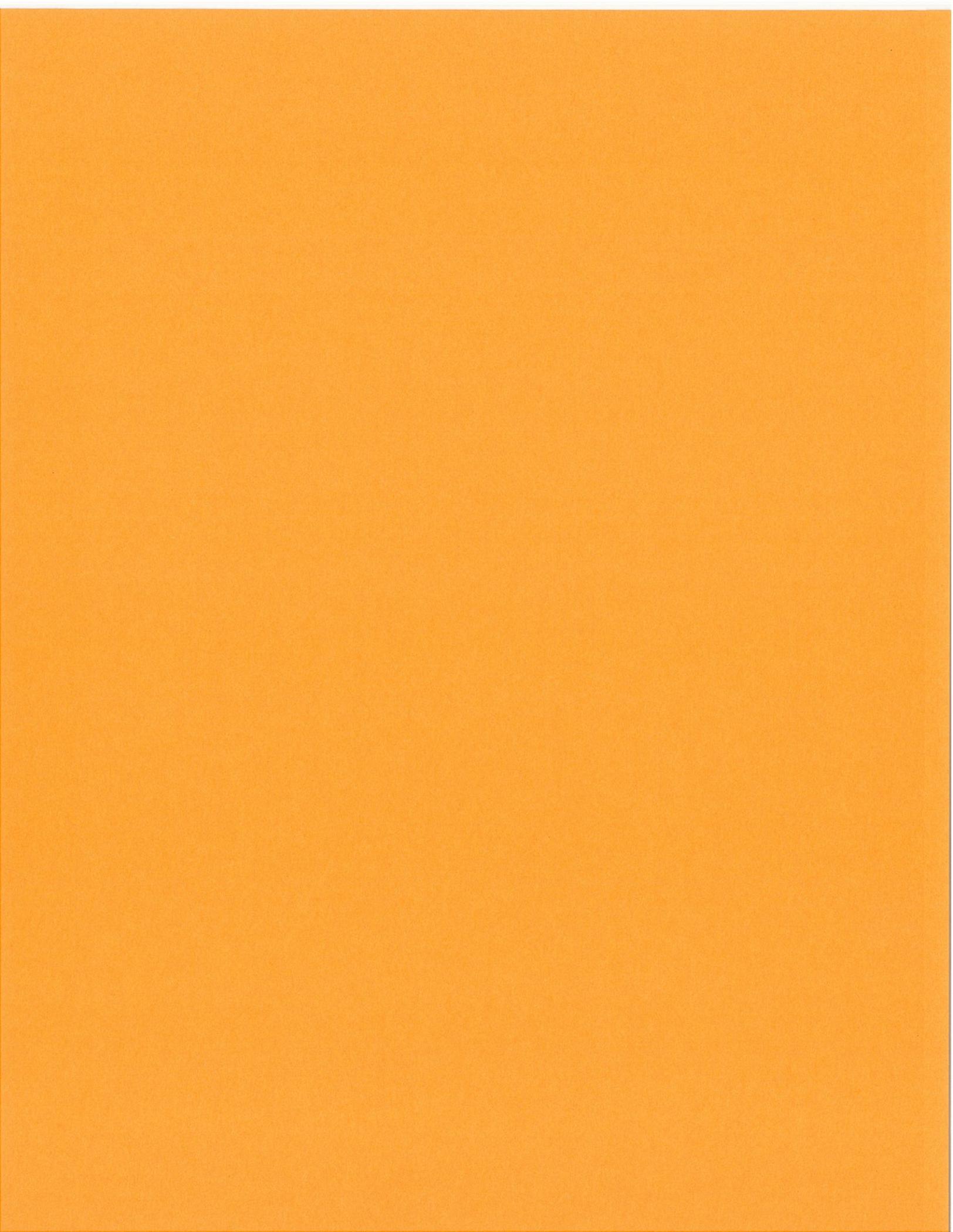
PASSED AND ADOPTED BY the Board of Directors of the El Dorado County Resource Conservation District on January 3, 2012.

By 
Mark Egbert, District Manager


Carlan Meyer, President
Board of Directors

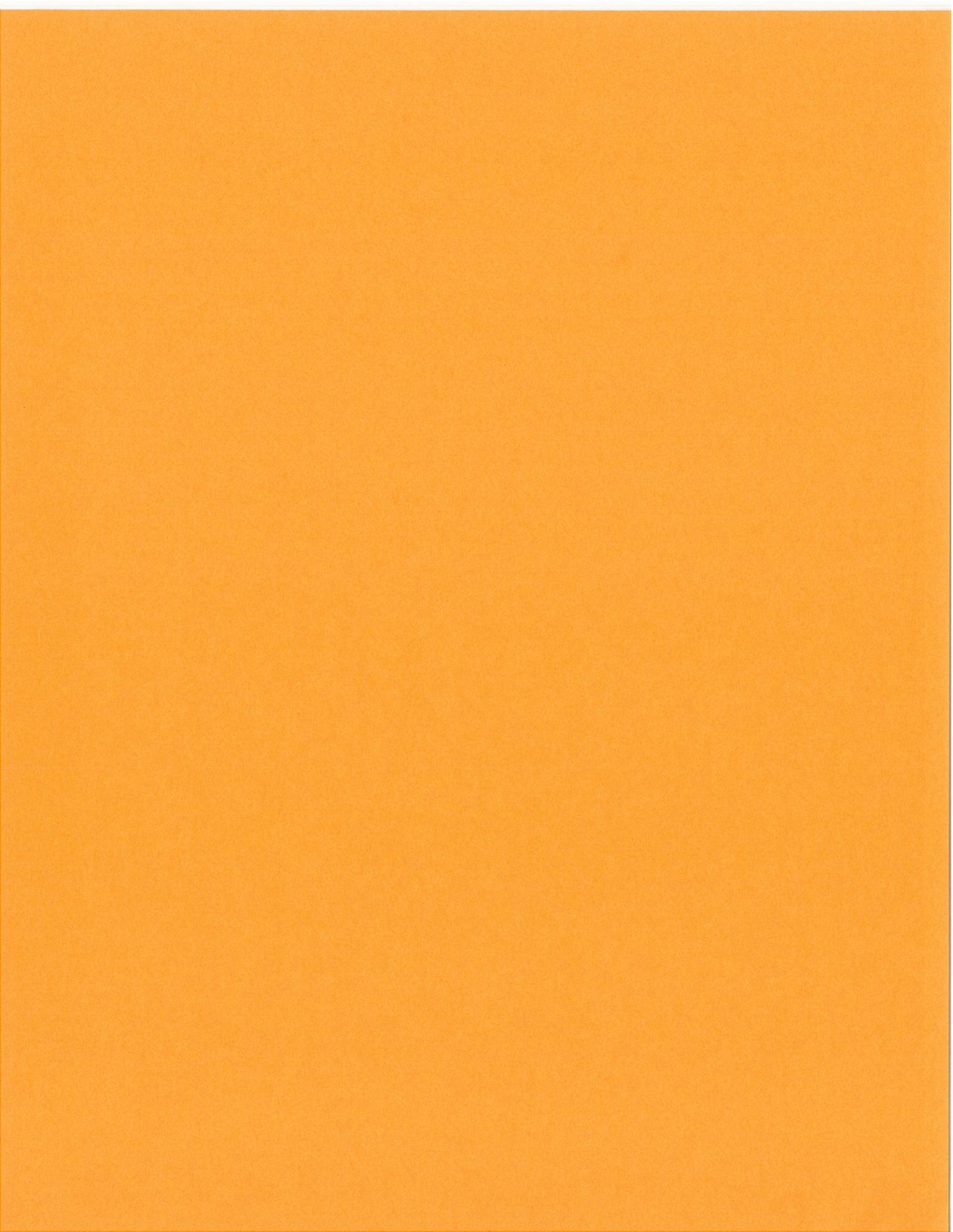
Date 1/2/12

Date 1-2-12



Land Tenure

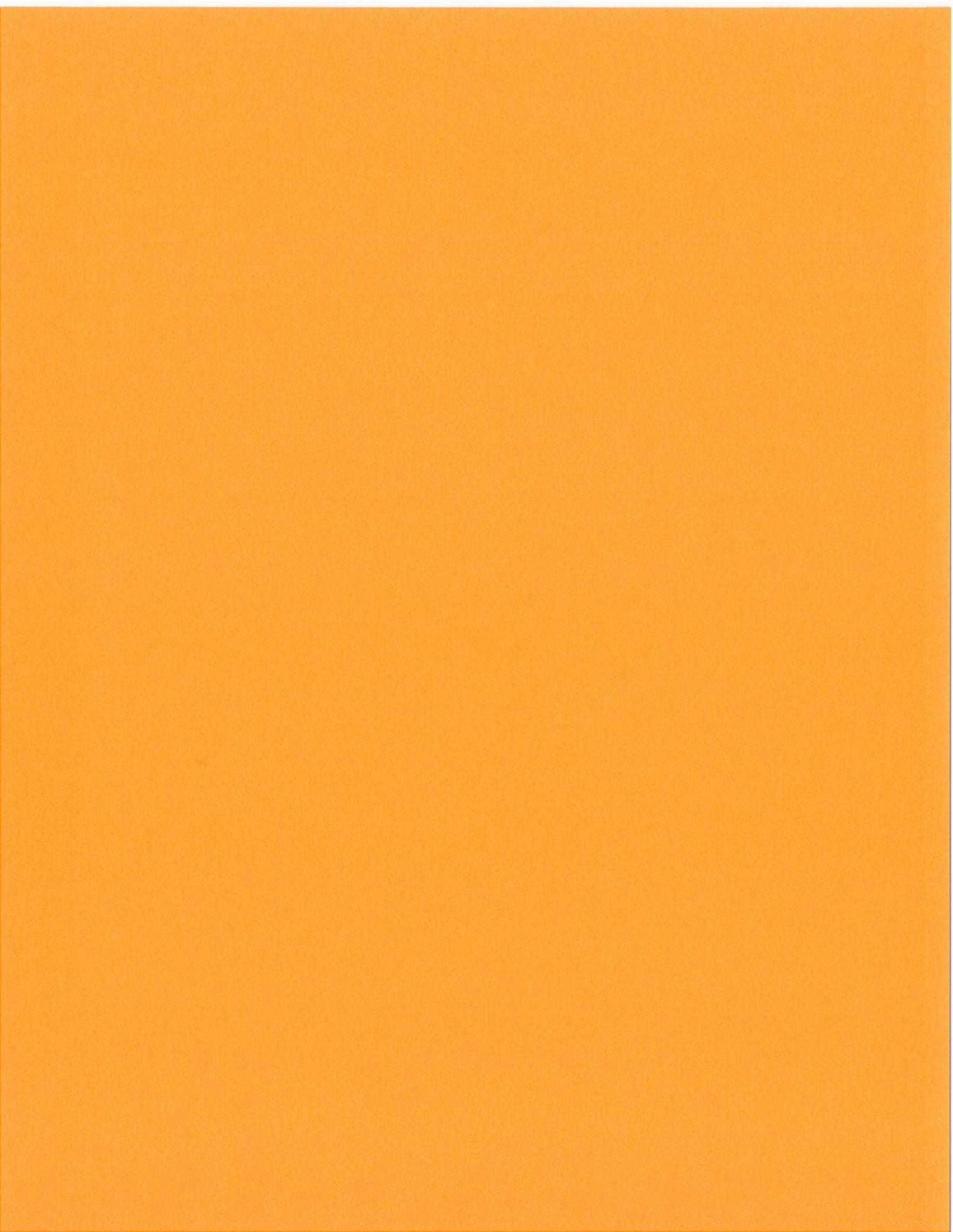
The project is located on Forest Service Land and will be completed by the Forest Service, Eldorado National Forest.



Sierra Nevada Conservancy
2013 Proposition 84 Grant Program

Leases or Agreements

No Leases or Agreements are required for this project.



CEQA/NEPA COMPLIANCE FORM

(CALIFORNIA ENVIRONMENTAL QUALITY ACT & NATIONAL ENVIRONMENTAL POLICY ACT)

Instructions: All applicants, including federal agencies, must complete the CEQA compliance section. Check the box that describes the CEQA status of the proposed project. You must also complete the documentation component and submit any surveys, and/or reports that support the checked CEQA status. NOTE: There is no page limit requirement on this form. You may use the space you need to fully describe the CEQA/NEPA status of this project.

If NEPA is applicable to your project, you must complete the NEPA section in addition to the CEQA section. Check the box that describes the NEPA status of the proposed project. Complete the documentation component and submit any surveys, and/or reports that support the NEPA status.

For both CEQA and NEPA, submittal of permits is only necessary if they contain conditions providing information regarding potential environmental impacts.

CEQA STATUS

(All applicants must complete this section)

Check the box that corresponds with the CEQA compliance for your project. The proposed action is either "Not a Project" under CEQA; is Categorical Exempt from CEQA; or requires a Negative Declaration, Mitigated Negative Declaration, or an Environmental Impact Report per CEQA.

"Not a Project" per CEQA

1. Describe how your project is "Not a Project" per CEQA:

Click here to enter text.

2. If appropriate, provide documentation to support the "Not a Project" per CEQA status.

Click here to enter text.

Categorical Exemption or Statutory Exemption

If a project is categorically exempt from CEQA, all applicants, including public agencies that provide a filed Notice of Exemption, are required to provide a clear and comprehensive description of the physical attributes of the project site, including potential and known special-status species and habitat, in order for the SNC to make a determination that the project is exempt. A particular project that ordinarily would fall under a specific category of exemption may require further CEQA review due to individual circumstances, i.e., it is within a sensitive location, has a cumulative impact, has a significant effect on the environment, is within a scenic highway, impacts an historical resource, or is on a hazardous waste site. Potential cultural/archaeological resources must be noted, but do not need to be specifically listed or mapped at the time of application submittal. Backup data informing the exemption decision, such as biological surveys, Cultural Information Center requests, research papers, etc. should accompany the full application. Applicants anticipating the SNC to file an exemption are encouraged to conduct the appropriate surveys and submit an information request to an office of the California Historical Resources Information System (CHRIS).

1. Describe how your project complies with the requirements for claiming a Categorical or Statutory Exemption per CEQA:

Click here to enter text.

2. If your organization is a state or local governmental agency, submit a signed, approved Notice of Exemption (NOE) documenting the use of the Categorical Exemption or Statutory Exemption, along with any permits, surveys, and/or reports that have been completed to support this CEQA status. The Notice of Exemption must bear a date stamp to show that it has been filed with the State Clearinghouse and/or County Clerk, as required by CEQA.

[Click here to enter text.](#)

3. If your organization is a nonprofit or federal agency, there is no other California public agency having discretionary authority over your project, and you would like the SNC to prepare a NOE for your project, let us know that and provide any permits, surveys, and/or reports that have been completed to support the CEQA status.

[Click here to enter text.](#)

-
- Negative Declaration OR**
 Mitigated Negative Declaration

If a project requires a Negative Declaration or Mitigated Negative Declaration, then applicants must work with a qualified public agency, i.e., one that has discretionary authority over project approval or permitting, to complete the CEQA process.

1. Describe how your project complies with the requirements for the use of a Negative Declaration or a Mitigated Negative Declaration per CEQA:
Compliance with Section 21108 or 21552 of the Public Resources Code.
2. Submit the approved Initial Study and Negative Declaration/Mitigated Negative Declaration along with any Mitigation Monitoring or Reporting Plans, permits, surveys, and/or reports that have been completed to support this CEQA status. The IS/ND/MND must be accompanied by a signed, approved Notice of Determination, which must bear a date stamp to show that it has been filed with the State Clearinghouse and/or County Clerk, as required by CEQA.

Attached.

Environmental Impact Report

If a project requires an Environmental Impact Report, then applicants must work with a qualified public agency, i.e., one that has discretionary authority over project approval or permitting, to complete the CEQA process.

1. Describe how your project complies with the requirements for the use of an Environmental Impact Report per CEQA:
[Click here to enter text.](#)
2. Submit the Draft and Final Environmental Impact Report along with any Mitigation Monitoring or Reporting Plans, permits, surveys, and/or reports that have been completed to support this CEQA status. The EIR documentation must be accompanied by a signed, approved Notice of Determination, which must

bear a date stamp to show that it has been filed with the State Clearinghouse and/or County Clerk, as required by CEQA.

[Click here to enter text.](#)

NEPA STATUS

(Applicable to federal applicants, some tribal organizations, and applicants receiving federal funding or conducting activities on federal lands)

Check the box that corresponds with the NEPA compliance for your project.

Categorical Exclusion

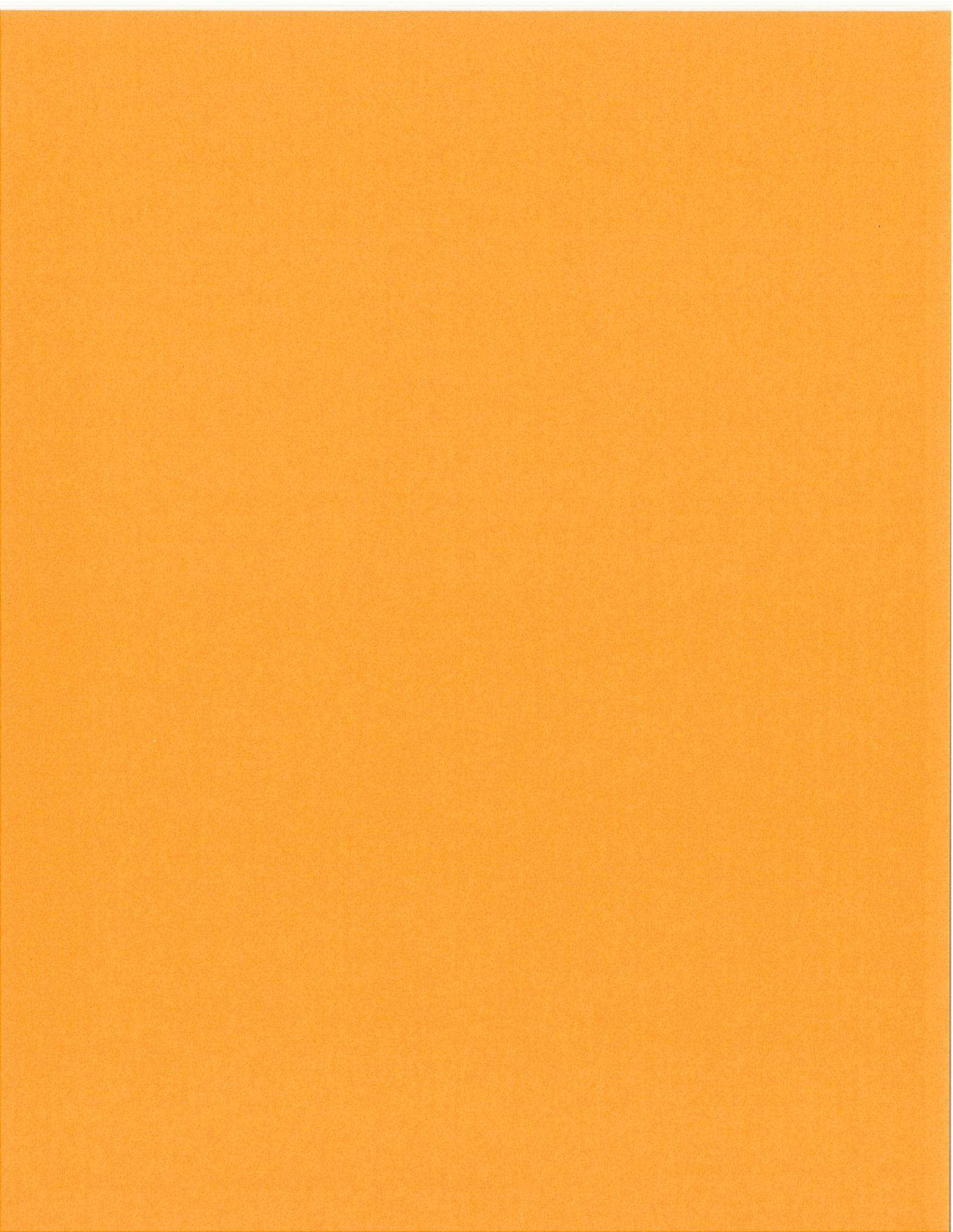
1. Describe how your project complies with the requirements for claiming a Categorical Exclusion per NEPA:
[Refer to Decision Notice and Finding of No Significant Impact Report \(December 2011\)](#)
2. Submit the signed, approved Decision Memo and Categorical Exclusion, as well as documentation to support the Categorical Exclusion, including any permits, surveys, and/or reports that have been completed to support this NEPA status:
[Attached.](#)

Environmental Assessment & Finding of No Significant Impact

1. Describe how your project complies with the requirements for the use of an Environmental Assessment and Finding of No Significant Impact per NEPA:
[Click here to enter text.](#)
2. Submit the signed, approved Environmental Assessment and Finding of No Significant Impact along with any permits, surveys, and/or reports that have been completed to support this NEPA status.
[Click here to enter text.](#)

Environmental Impact Statement

1. Describe how your project complies with the requirements for the use of an Environmental Impact Statement per NEPA:
[Click here to enter text.](#)
2. Submit the Draft and approved, Final Environmental Impact Statement, along with the Record of Decision and any permits, surveys, and/or reports that have been completed to support this NEPA status.
[Click here to enter text.](#)





El Dorado County Resource Conservation District and Georgetown Divide Resource Conservation District
100 Forni Road, Suite A • Placerville, CA 95667 • Phone (530) 295-5630, FAX (530) 295-5635

December 9, 2012

State Clearinghouse / Governor's Office of Planning and Research
1400 Tenth Street
P.O. Box 3044
Sacramento, CA 95812-3044

Subject: Notice of Intent to Adopt a Mitigated Negative Declaration for the Raintree Forest Health Project.

The Placerville Ranger District on the Eldorado National Forest proposes restorative and preventative treatments and management actions in order to improve the forest health and re-establish a sustainable landscape condition on public lands within the Raintree project area. The Placerville Ranger District proposes to implement activities to reduce fuel loads and fire hazards, and to improve wildlife habitat, watershed condition, and forest growth, while considering effects on other resources and activities. Treatments and other management actions will commence in 2012 and be completed by 2017. Proposed activities will include commercial and pre-commercial understory thinning of mixed conifer stands and plantations, enhancing aspen and hardwood habitat, removing hazard trees adjacent to system roads and dispersed camping areas, reconstructing and repairing system roads, grapple and machine piling, masticating brush and small trees, restoring watershed function, and prescribed understory burning.

The Raintree project area lies within the Placerville Ranger District of the Eldorado National Forest. The reader is referred to the Eldorado National Forest Resource and Land Management Plan (LRMP, 1989) and the Sierra Nevada Forest Plan Amendment (SNFPA, 2004) for an overview description of the Eldorado National Forest. The Raintree project area is situated south of Highway 50, and south of the Mormon Emigrant Trail Road, including the general area between Capps Crossing and Leek Spring Lookout. The Project Area covers approximately 9,144 acres located entirely in El Dorado County, California in T.9N., R.14 E., in all or portions of Sections 1-3, and 10-15; T.9N., R.15 E., in all or portions of Sections 3-10, and 16-21; T.10N., R.14E., in all or portions of Sections 35 and 36; and T.10 N, R.15E., in all or portions of Sections 31 and 32; M.D.B & M. Elevations range from 5,000 feet at the North Fork Consumnes River on the west edge of the project area to 6,500 feet on Baltic Ridge on the north edge of the project area. The area is accessed from Highway 50 by Sly Park Road to Mormon Emigrant Trail Road then to the North South and Meiss Roads.

The purpose and need of the proposed treatment activities in the Raintree project area is to modify the forest vegetation in order to put it on a trajectory toward the desired conditions for: (1) reduced tree density; (2) sustained old forest conditions; (3) enhanced wildlife habitat; (4) reduced wildfire risk; (5) improved long-term scenic sustainability; (6) increased recreational opportunities; (7) enhanced riparian conservation areas; and, (8) maximized revenue derived from commercial products to perform essential and costly biomass removal and surface fuel treatments.

This action is needed to: (1) improve the forest health across the Raintree project area; (2) reduce the fuel loading to reduce the threat of wild fire; (3) maintain and enhance the existing old growth conifers, aspen and oak component; (4) maintain and enhance recreation opportunities; (5) treat

hazardous fuels in a cost-effective manner to maximize treatment acres under a limited budget while fulfilling the role the Forest Service has in providing a wood supply for local manufacturers; (6) provide a maintainable level of forest access while closing unneeded roads and motorized trails to enhance wildlife habitat and reduce wildlife harassment; (7) enhance and maintain Strategically Placed Area fuels Treatments (SPLATS) designed to slow the spread of wildfire; and (8) enhance soil productivity within plantations by increasing soil cover.

Additionally, there is a need to improve watershed condition and related ecosystem services by improving the conditions of several streams and riparian zones in the project area. Improvements include: maintaining or restoring the geomorphic and biological characteristics of special aquatic features within riparian zones, streams, including in stream flows, and hydrologic connectivity both within and between watersheds to provide for the habitat needs of aquatic species.

This action responds to the desired conditions, management intent, and management objective by land allocation outlined in the SNFPA Record of Decision.

Starting and Ending Dates for Public Review:

Starting Date: January 10, 2012

Ending Date: February 10, 2012

Date, time and place of any scheduled public meetings or hearings:

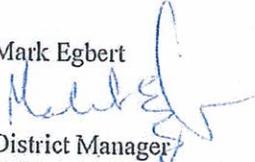
- 1) El Dorado County Resource Conservation District's Board Meeting: February 7, 2012. 100 Forni Road. Placerville, CA 95667.

Addresses where copies of the Mitigated Negative Declaration are available for review:

- 1) El Dorado County & Georgetown Divide Resource Conservation District's
100 Forni Road, Suite A
Placerville, CA 95667
(530) 295-5630
- 2) Eldorado National Forest, United State Forest Service
Supervisors Office
100 Forni Road
Placerville, CA 95667
(530) 622-5061
- 3) El Dorado Public Library
345 Fair Lane
Placerville, CA 95667
(530) 621-5540
- 4) El Dorado County Clerk
360 Fair Lane
Placerville, CA 95667
(530) 621-5490

The proposed project locations are NOT contained on the lists compiled pursuant to Section 65962.5 of the California Government Code, including but not limited to lists of hazardous waste facilities, land designated as hazardous waste property, and hazardous waste disposal sites, and the information in the Hazardous Waste and Substances Statement required under subsection (f) of that section.

Mark Egbert



District Manager

El Dorado County & Georgetown Divide Resource Conservation District's
100 Forni Road, Suite A
Placerville, CA 95667
(p) (530) 295-5630
(f) (530) 295-5635

Cc:

Eldorado National Forest, United State Forest Service
Supervisors Office
100 Forni Road
Placerville, CA 95667
(530) 622-5061

El Dorado Public Library
345 Fair Lane
Placerville, CA 95667
(530) 621-5540

El Dorado County Clerk
360 Fair Lane
Placerville, CA 95667
(530) 621-5490

Sierra Nevada Conservancy
11521 Blocker Dr., Ste. 205
Auburn, CA 95603
(530) 823-4670

CEQA Environmental Checklist

Dist.-Co.-Rte.

P.M/P.M.

E.A.

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Visual Quality Objectives (VQO) will be met for all prescriptions throughout the project area. Trees that are removed within the visible foreground (approximately 100 feet from roadside edge) of Meiss (9N30) and North-South (10N83) system roads will have a maximum stump height of six inches. Large landing biomass piles within the foreground of 9N30 and 10N83 will be burned or removed within 2 years of project completion.				
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wellands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

For California spotted owls, maintain a limited operating period (LOP), prohibiting vegetation treatments within approximately ¼ mile of the activity center during the breeding season (March 1 through August 31), unless surveys confirm that California spotted owls are not nesting. Prior to implementing activities within or adjacent to a California spotted owl PAC and the location of the nest site or activity center is uncertain, conduct surveys to establish or confirm the location of the nest or activity center.

For northern goshawks, maintain a limited operating period (LOP), prohibiting vegetation treatments within approximately ¼ mile of the nest site during the breeding season (February 15 through September 15) unless surveys confirm that northern goshawks are not nesting. If the nest stand within a protected activity center (PAC) is unknown, either apply the LOP to a ¼ mile area surrounding the PAC, or survey to determine the nest stand location.

Water holes in the vicinity of the project will be inspected annually by a fisheries biologist for existing aquatic species and aquatic dependent species before water withdrawal for dust abatement. A Forest Service approved screen covered drafting box, or other device to create a low entry velocity (Riparian Conservation Objective (RCO) #4, SNFPA ROD).

Aquatic veined lichen (*Peltigera hydrothyria*), occurs within the proposed project area (Streams NS-4 and NS-10). To maintain current stream shading overstory canopy within 100 feet of the occurrence will not be altered by project activities. Project botanist will be consulted prior to initiation of road maintenance within 100 feet of drainages with aquatic veined lichen. Should any new TES species be located during the proposed project, available steps will be taken to evaluate and mitigate effects.

V. CULTURAL RESOURCES: Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Disturb any human remains, including those interred outside of formal cemeteries? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Cultural resource sites within the project area boundary will be protected from ground disturbance associated with mechanical and hand treatments during all phases of implementation activities of this project. No mechanical equipment will be allowed to operate within the boundaries of an identified cultural site. Where it is necessary to remove trees from within site boundaries, the District Archaeologist will be consulted to mitigate impacts. All thinning of trees adjacent to site boundaries will be directionally felled away from the site. The sites in units or near road maintenance/reconstruction will be identified with flagging and avoided during project activities. Sites that are flammable will be avoided during prescribed understory burning and fire line construction activities. Construction of firelines will occur outside of the cultural resource site boundaries. Gaps created will avoid cultural resource site locations. All machine and hand piles will be placed away from sites at a distance such that site features will not be affected by flames and heat. Hazard tree removal on or in the vicinity of cultural resource sites will be coordinated with the District Archaeologist and will follow the guidelines for hazard tree removal included in the Sierra Programmatic Agreement. (Refer to Heritage Resource Report, R2009-05-03-60001, pages 9-12 for specific protection measures. Klemic, 2011)

VI. GEOLOGY AND SOILS: Would the project:

- | | | | | |
|--|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| ii) Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| iii) Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |
| iv) Landslides? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- | | | | | |
|--|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| b) Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Best Management Practices (BMPs) will be applied to project activities

VII. GREENHOUSE GAS EMISSIONS: Would the project:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

IX. HYDROLOGY AND WATER QUALITY: Would the project:

a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

X. LAND USE AND PLANNING: Would the project:

a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XI. MINERAL RESOURCES: Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XII. NOISE: Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIII. POPULATION AND HOUSING: Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIV. PUBLIC SERVICES:

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

January 20, 2012

Melissa Marquez
El Dorado County Resource Conservation District
100 Forni Road, Suite A
Placerville, CA 95667

Subject: CEQA Filing Fee Exemption Request
Project Name: Raintree Forest Health Project
SCH Number and/or local agency ID number: N/A

Dear Ms. Marquez:

Based on a review of the project referenced above, the Department of Fish and Game has determined that for the purposes of the assessment of CEQA filing fees (Fish and Game Code Section 711.4(c)) the project has the potential to affect fish and wildlife, or their habitat, and the project as described requires payment of a CEQA filing fee pursuant to the California Code of Regulations, Title 14, Section 753.5(d). At the time of filing of the Notice of Determination with the county clerk or Office of Planning and Research (State Clearinghouse), the appropriate CEQA filing fee will be due and payable. Please see the following website for a list of current fees: http://www.dfg.ca.gov/habcon/ceqa/ceqa_changes.html

This determination is for the purpose of assessment of CEQA filing fees and is independent of a lead agency's conclusion or determination regarding a project's effect on the environment pursuant to CEQA Statute 21082.2 or CEQA Guidelines 15064. If you have any questions, please contact me at (916) 358-2850, or pmoeszinger@dfg.ca.gov.

Sincerely,



Patrick Moeszinger
Environmental Scientist

Notice of Determination

Appendix D

To:

Office of Planning and Research
For U.S. Mail: P.O. Box 3044 Sacramento, CA 95812-3044
Street Address: 1400 Tenth St., Rm 113 Sacramento, CA 95814

County Clerk
County of: El Dorado
Address: 360 Fair Lane, Placerville CA 95667

From:

Public Agency: El Dorado County Resource
Address: Conservation District
100 Forni Rd, Ste A, Placerville CA 95667
Contact: Mark Egbert
Phone: 530-295-5630

Lead Agency (if different from above):
Address:
Contact:
Phone:

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse):

Project Title: Raintree Forest Health Project

Project Applicant: El Dorado County Resource Conservation District

Project Location (include county): North South Road and Meiss Road Eldorado National Forest, El Dorado County

Project Description:

The Eldorado National Forest proposes restorative and preventative treatments and management actions. Proposed activities would include commercial and pre-commercial understory thinning of mixed conifer stands and plantations, enhancing aspen and hardwood habitat, removing hazard trees adjacent to system roads and dispersed camping areas, reconstructing and repairing system roads, grapple and machine piling, mastication brush and small trees, restoring watershed function, and prescribed understory burning.

- 1. The project [] will [x] will not have a significant effect on the environment.
2. [] An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA. [x] A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [x] were [] were not made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [x] was [] was not adopted for this project.
5. A statement of Overriding Considerations [] was [x] was not adopted for this project.
6. Findings [x] were [] were not made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at:

El Dorado County Resource Conservation District 100 Forni Rd, Ste A, Placerville CA 95667

Signature (Public Agency): [Signature] Title: President

Date: 01/18/2012 Date Received for filing at OPR:

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2012017021

Project Title: Raintree Forest Health Project

Lead Agency: El Dorado County Resource Conservation District Contact Person: Mark Egbert
Mailing Address: 100 Forni Rd, Suite A Phone: 530-295-5636
City: Placerville Zip: 95667 County: El Dorado County

Project Location: County: El Dorado County City/Nearest Community: Pollock Pines
Cross Streets: North South Road and Meiss Road Zip Code: 95726

Longitude/Latitude (degrees, minutes and seconds): 38 ° 38 ' 47.9 " N / 120 ° 23 ' 2.96 " W Total Acres: 9,144

Assessor's Parcel No.: _____ Section: 1-36 Twp.: 9N, 10N Range: 14 E, 15E Base: M.D.B&M

Within 2 Miles: State Hwy #: n/a Waterways: Cosumnes River

Airports: n/a Railways: n/a Schools: n/a

Document Type:

CEQA: NOP Draft EIR NEPA: NOI Other: Joint Document
 Early Cons Supplement/Subsequent EIR EA Final Document
 Neg Dec (Prior SCH No.) _____ Draft EIS Other: _____
 Mit Neg Dec Other: _____ FONSI

Local Action Type:

General Plan Update Specific Plan Rezone Annexation
 General Plan Amendment Master Plan Prezone Redevelopment
 General Plan Element Planned Unit Development Use Permit Coastal Permit
 Community Plan Site Plan Land Division (Subdivision, etc.) Other: _____

Development Type:

Residential: Units _____ Acres _____ Transportation: Type _____
 Office: Sq.ft. _____ Acres _____ Employees _____ Mining: Mineral _____
 Commercial: Sq.ft. _____ Acres _____ Employees _____ Power: Type _____ MW _____
 Industrial: Sq.ft. _____ Acres _____ Employees _____ Waste Treatment: Type _____ MGD _____
 Educational: _____ Hazardous Waste: Type _____
 Recreational: _____ Other: _____
 Water Facilities: Type _____ MGD _____

Project Issues Discussed in Document:

Aesthetic/Visual Fiscal Recreation/Parks Vegetation
 Agricultural Land Flood Plain/Flooding Schools/Universities Water Quality
 Air Quality Forest Land/Fire Hazard Septic Systems Water Supply/Groundwater
 Archeological/Historical Geologic/Seismic Sewer Capacity Wetland/Riparian
 Biological Resources Minerals Soil Erosion/Compaction/Grading Growth Inducement
 Coastal Zone Noise Solid Waste Land Use
 Drainage/Absorption Population/Housing Balance Toxic/Hazardous Cumulative Effects
 Economic/Jobs Public Services/Facilities Traffic/Circulation Other: Minor land alteration

Present Land Use/Zoning/General Plan Designation:

National Forest Lands

Project Description: *(please use a separate page if necessary)*
Attachment A

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

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Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with an "X".
 If you have already sent your document to the agency please denote that with an "S".

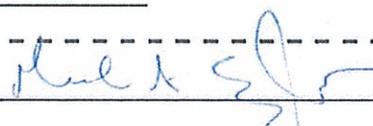
- | | |
|--|--|
| <input type="checkbox"/> Air Resources Board | <input type="checkbox"/> Office of Historic Preservation |
| <input type="checkbox"/> Boating & Waterways, Department of | <input type="checkbox"/> Office of Public School Construction |
| <input type="checkbox"/> California Emergency Management Agency | <input type="checkbox"/> Parks & Recreation, Department of |
| <input type="checkbox"/> California Highway Patrol | <input type="checkbox"/> Pesticide Regulation, Department of |
| <input type="checkbox"/> Caltrans District # _____ | <input type="checkbox"/> Public Utilities Commission |
| <input type="checkbox"/> Caltrans Division of Aeronautics | <input type="checkbox"/> Regional WQCB # _____ |
| <input type="checkbox"/> Caltrans Planning | <input type="checkbox"/> Resources Agency |
| <input type="checkbox"/> Central Valley Flood Protection Board | <input type="checkbox"/> Resources Recycling and Recovery, Department of |
| <input type="checkbox"/> Coachella Valley Mtns. Conservancy | <input type="checkbox"/> S.F. Bay Conservation & Development Comm. |
| <input type="checkbox"/> Coastal Commission | <input type="checkbox"/> San Gabriel & Lower L.A. Rivers & Mtns. Conservancy |
| <input type="checkbox"/> Colorado River Board | <input type="checkbox"/> San Joaquin River Conservancy |
| <input type="checkbox"/> Conservation, Department of | <input type="checkbox"/> Santa Monica Mtns. Conservancy |
| <input type="checkbox"/> Corrections, Department of | <input type="checkbox"/> State Lands Commission |
| <input type="checkbox"/> Delta Protection Commission | <input type="checkbox"/> SWRCB: Clean Water Grants |
| <input type="checkbox"/> Education, Department of | <input type="checkbox"/> SWRCB: Water Quality |
| <input type="checkbox"/> Energy Commission | <input type="checkbox"/> SWRCB: Water Rights |
| <input checked="" type="checkbox"/> Fish & Game Region #2 _____ | <input type="checkbox"/> Tahoe Regional Planning Agency |
| <input type="checkbox"/> Food & Agriculture, Department of | <input type="checkbox"/> Toxic Substances Control, Department of |
| <input type="checkbox"/> Forestry and Fire Protection, Department of | <input type="checkbox"/> Water Resources, Department of |
| <input type="checkbox"/> General Services, Department of | <input type="checkbox"/> Other: <u>USFS, Eldorado National Forest</u> |
| <input type="checkbox"/> Health Services, Department of | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Housing & Community Development | |
| <input type="checkbox"/> Native American Heritage Commission | |

Local Public Review Period (to be filled in by lead agency)

Starting Date January 10, 2012 Ending Date February 10, 2012

Lead Agency (Complete if applicable):

Consulting Firm: _____	Applicant: <u>El Dorado County Resource Conservation District</u>
Address: _____	Address: <u>100 Forni Rd, Suite A</u>
City/State/Zip: _____	City/State/Zip: <u>Placerville, CA 95667</u>
Contact: _____	Phone: <u>530-295-5630</u>
Phone: _____	

Signature of Lead Agency Representative:  Date: 01/09/2012

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

California Home

Monday, August 12, 2013



OPR Home > CEQAnet Home > CEQAnet Query > Search Results > Document Description

Raintree Forest Health Project

SCH Number: 2012012021

Document Type: MND - Mitigated Negative Declaration

Project Lead Agency: El Dorado County

Project Description

The Placerville Ranger District on the Eldorado National Forest proposes restorative and preventative treatments and management actions in order to improve the forest health and re-establish a sustainable landscape condition on public lands within the Raintree project area. The Placerville Ranger District proposes to implement activities to reduce fuel loads and fire hazards, and to improve wildlife habitat, watershed condition, and forest growth, while considering effects on other resources and activities. Treatments and other management actions will commence in 2012 and be completed by 2017. Proposed activities will include commercial and pre-commercial understory thinning of mixed conifer stands and plantations, enhancing aspen and hardwood habitat, removing hazard trees adjacent to system roads and dispersed camping areas, reconstructing and repairing system roads, grapple and machine piling, masticating brush and small trees, restoring watershed function, and prescribed understory burning. The Raintree project area is situated south of Hwy 50, and south of the Mormon Emigrant Trail Road, including the general area between Capps Crossing and Leek Spring Lookout. The Project Area covers approximately 9,144 acres located entirely in El Dorado County. Elevations range from 5,000 feet at the North Fork Cosumnes River on the west edge of the project area to 6,500 feet on Ballic Ridge on the north edge of the project area. The area is accessed from Hwy 50 by Sly Park Road to Mormon Emigrant Trail Road then to the North South and Meiss Roads.

Contact Information

Primary Contact:

Mark Egbert
El Dorado County Resource Conservation District
530 295 5636
100 Forni Rd, Suite A
Placerville, CA 95667

Project Location

County: El Dorado
City:
Region:
Cross Streets: North South Road and Meiss Road
Latitude/Longitude: 38° 38' 47.9" / 120° 23' 2.96" [Map](#)
Parcel No:
Township: 9,10N
Range: 14,15E
Section: 1-36
Base: MDB&M
Other Location Info: City/Nearest Community: Pollock Pines

Proximity To

Highways:
Airports:
Railways:
Waterways: Cosumnes River
Schools:
Land Use: National Forest Lands

Development Type

Local Action

Project Issues

Aesthetic/Visual, Archaeologic-Historic, Biological Resources, Soil Erosion/Compaction/Grading, Other Issues (Minor land alteration)

Reviewing Agencies (Agencies in Bold Type submitted comment letters to the State Clearinghouse)

Resources Agency; Department of Fish and Wildlife, Region 2; Cal Fire; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Caltrans, District 3; **Regional Water Quality Control Bd., Region 5 (Sacramento)**; Native American Heritage Commission; State Lands Commission

Date Received: 1/11/2012 Start of Review: 1/11/2012 End of Review: 2/9/2012

[CEQAnet HOME](#) | [NEW SEARCH](#)

California Home

Monday, August 12, 2013

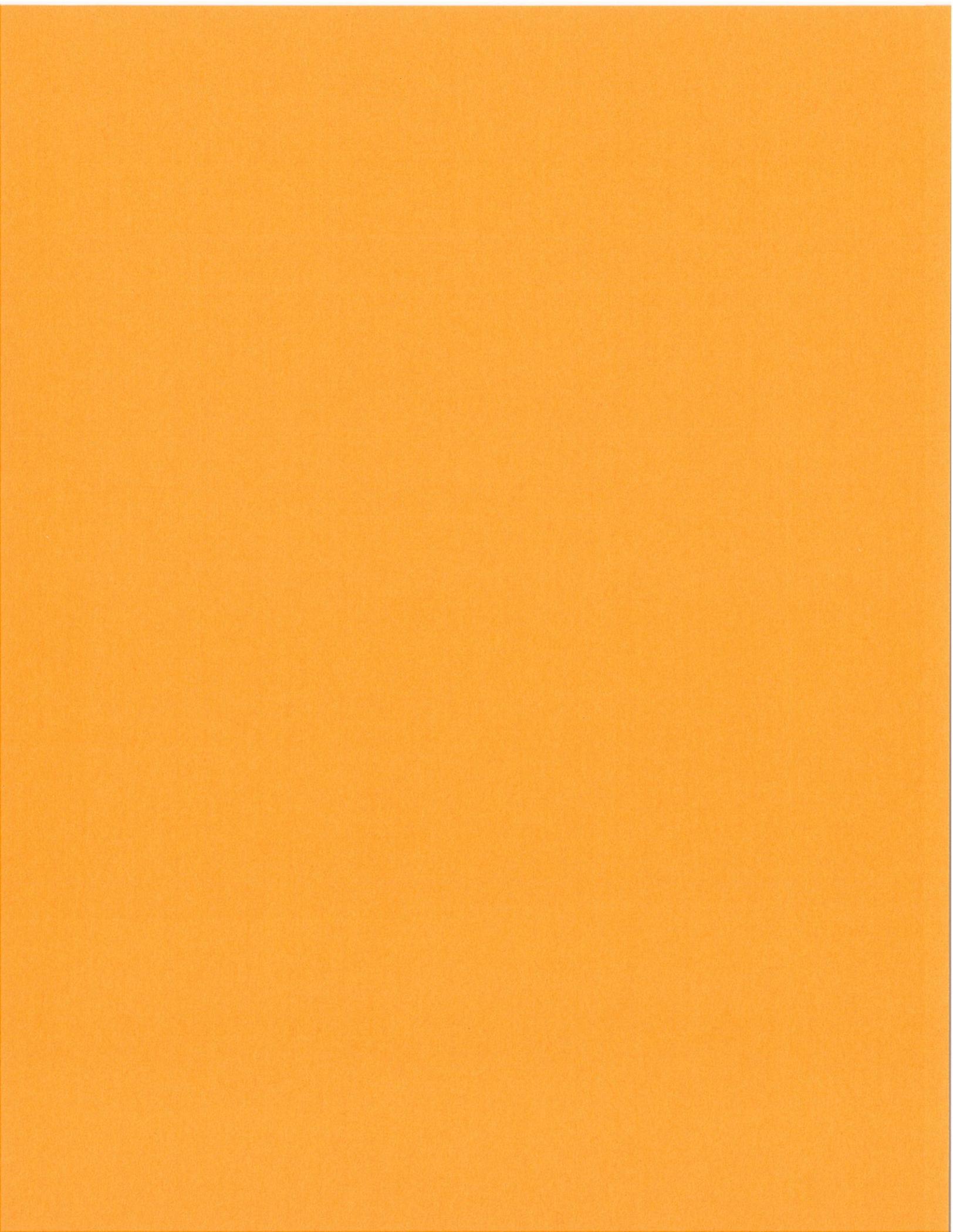


OPR Home > CEQAnet Home > CEQAnet Query > Search Results > Project Description

Raintree Forest Health Project

City	Cross Street	Document Type	Description	Date Received
North South Road and Meiss Road		<u>Mitigated Negative Declaration</u>	The Placerville Ranger District on the Eldorado National Forest proposes restorative and preventative treatments and management actions in order to improve the forest health and re-establish a sustainable landscape condition on public lands within the Raintree project area. The Placerville Ranger District proposes to implement activities to reduce fuel loads and fire hazards, and to improve wildlife habitat, watershed condition, and forest growth, while considering effects on other resources and activities. Treatments and other management actions will commence in 2012 and be completed by 2017. Proposed activities will include commercial and pre-commercial understory thinning of mixed conifer stands and plantations, enhancing aspen and hardwood habitat, removing hazard trees adjacent to system roads and dispersed camping areas, reconstructing and repairing system roads, grapple and machine piling, masticating brush and small trees, restoring watershed function, and prescribed understory burning. The Raintree project area is situated south of Hwy 50, and south of the Mormon Emigrant Trail Road, including the general area between Capps Crossing and Leek Spring Lookout. The Project Area covers approximately 9,144 acres located entirely in El Dorado County. Elevations range from 5,000 feet at the North Fork Consumnes River on the west edge of the project area to 6,500 feet on Baltic Ridge on the north edge of the project area. The area is accessed from Hwy 50 by Sly Park Road to Mormon Emigrant Trail Road then to the North South and Meiss Roads.	1/11/2012

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NEPA Questionnaire

If you are working with a Federal Land Manager as an applicant or the proposed project is located on federally managed lands, and the proposed project is most likely not exempt from CEQA and a CEQA lead agency has not been identified, please make sure to provide comprehensive answers to all of the applicable questions below in addition to the information required by the GAP.

A. What NEPA document has been prepared or approved?

Decision Notice and Finding of No Significant Impact – Raintree Forest Health Project.

What is the proposed action addressed by the document?

The USFE decided to select Alternative 1, the Proposed Action, for implementation. Based on review of the project in the field, evaluation of the Alternatives in the Raintree Forest Health Project Final Environmental Assessment (EA), the supporting documentation and a review of public comments, once implemented, Alternative I will effect an immediate change in potential wildfire behavior within treated stands and across the project area, by reducing the rate of spread and the intensity of fire by reducing hazardous fuels on approximately 9,144 acres of National Forestland. The selection of Alternative I considers the public comments received in response to the Scoping Notice and circulation of the Preliminary Environmental Assessment, public collaboration field trips, and discussions with the Interdisciplinary Team. Alternative I, as well as the nonselected Alternatives, are described and analyzed in the Raintree Forest Health Project EA. In making this decision, they intend to implement all resource protection design criteria identified for Alternative I in the EA. Previous, similar treatments on similar forest lands have received broad, local public support.

What is the scope of the environmental analysis in the document – e.g., for a NEPA environmental assessment – is the analysis large-scale (as for plans) or project specific?

Project specific.

B. If a NEPA EA/Finding of No Significant Impact (FONSI) or EIS was prepared and approved:

1. When was the NEPA document approved? December 12, 2011

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2. Is the proposed project clearly described within the NEPA document? Does it indicate the project location, project objectives, and all activities considered to be part of the project? Where in the document is the pertinent information located?

YES.

3. Describe what was included in the public participation/notification process.

The project proposal was listed in the Eldorado National Forest Schedule of Proposed Actions (SOPA) each quarter since July 2008. The project proposal was provided to the public and other agencies (totaling 12 groups or interested parties) for comment during scoping on August 26, 2009. On May 7, 2010, another scoping notice was provided to the public and others for additional comments due to changed conditions of the proposed project. (See scoping notice and mailing list in the Project Record). Three individuals responded to the scoping notice. As part of the public involvement process, the Placerville Ranger District initiated post-scoping stakeholder meetings and field trips on August 3, 2010 and October 22, 2010. Stakeholders involved included representatives from the El Dorado County Fire Safe Council, Sierra Forest Legacy, the forest products industry, and Forest Service resource specialists. (See meeting notes in the Project Record (PR)). A Preliminary Environmental Assessment (PEA) was mailed to the public and a legal notice published in the Mountain Democrat newspaper on March 3, 2011. A total of seventeen PEA packages were mailed. Six timely comment letters were received during the 30-day comment period to the PEA.

Is there a summary of issues raised in public comments?

Yes. Forest Service responses to public comments on the Raintree Forest Health Project PEA are located in Appendix A of that document. The District also provided an opportunity for the public to continue their involvement with the Raintree project in the form of a collaboration held on June 24, 2011.

4. Are mitigation measures (including design features) discussed, listed, and adopted as conditions? If so, where in the documentation do they exist? Do they include conditions as part of the project approval such as Best Management Practices (e.g., to prevent soil erosion, to protect water quality, to protect stream buffers, or to protect sensitive sites); wildlife, sensitive habitat, or cultural resources protocols, or other "standard" measures used by federal agencies (e.g., regarding limited herbicide use, fire prevention or road maintenance/construction etc.)?

Mitigation measures have been incorporated into the Proposed Action. These mitigation measures include, but are not limited to: imposing a limited operating period for ground disturbing activities from March 1 to August 15 for California spotted owl, flagging cultural resources for protection during ground disturbing activities and prescribed burning, and maintaining late seral forest habitat. Long-term adverse effects are not expected. After considering the environmental effects described in the Environmental Assessment (EA), The USFS has determined that these actions will not have a significant effect on the quality of the human environment considering the context and intensity of impacts (40 CFR 1508.27).

5. How does the document address indirect impacts? This question will relate to the growth inducing impact discussion requirement by CEQA.

The direct, indirect and cumulative effects to the project are summarized in the EA pgs 10-28.

6. Does the document address cumulative impacts?

Yes. The direct, indirect and cumulative effects to the project are summarized in the EA pgs 10-28.

7. Does the document address greenhouse gas emissions or climate change?

The direct, indirect and cumulative effects to climate change are summarized from the Silviculture Report, Appendix H (Howard, 2011).

- C. General guidance on CEQA impact analysis may be found in the [Initial Study checklist](#) (CEQA Guidelines, Appendix G). See also "[Mitigated Negative Declarations](#)," CEQA Technical Advice Series, prepared by the Governor's Office of Planning and Research (OPR).

Notes: _____



Decision Notice

United States
Department of
Agriculture

And

Forest
Service

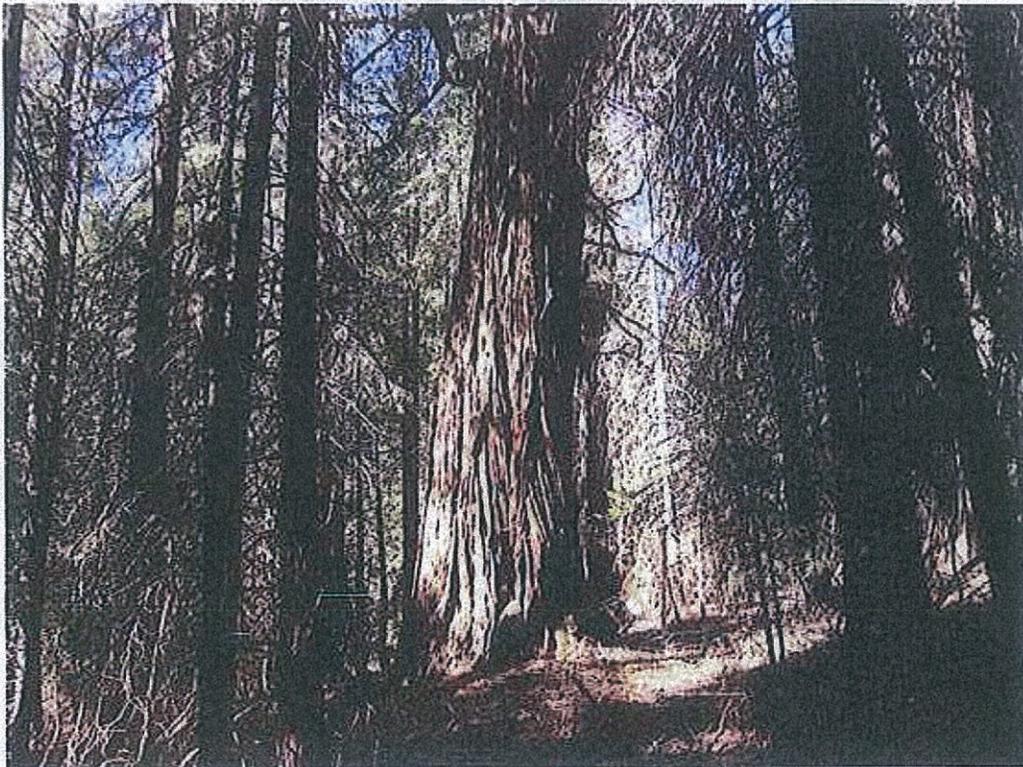
Finding of No Significant Impact

December 2011

Raintree Forest Health Project



Placerville Ranger District, Eldorado National Forest
El Dorado County, California



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<http://www.fs.fed.us/r5/eldorado/projects/hfi.html>

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Decision Notice

Background

The Raintree Forest Health Project is located on the Placerville Ranger District on the Eldorado National Forest located south of Highway 50, and south of the Mormon Emigrant Trail Road, including the general area between Capps Crossing and Leek Springs Lookout in El Dorado County, California. (Refer to Environmental Assessment Maps 1 and 2)

The Raintree Forest Health Project will perform fuel treatment activities designed to change existing forest surface and ladder and crown fuel profiles in order to reduce potential wildfire intensity and behavior, and mitigate the consequences of large, potentially damaging wildfires on selected forested areas. All activities will be implemented in compliance with the Eldorado National Forest Land and Resource Management Plan (USDA Forest Service 1989) as amended by the 2004 Sierra Nevada Forest Plan Amendment (USDA Forest Service 2004), the Sierra Nevada Forests Management Indicator Species Amendment Environmental Impact Statement and Record of Decision (USDA Forest Service, 2007), and the Eldorado National Forest Public Wheeled Motorized Travel Management Environmental Impact Statement and Record of Decision (USDA Forest Service 2009) (LRMP). To the extent practicable, the removal and treatment of excess fuels will be accomplished expeditiously and economically, using wood by-products from over-dense stands to offset the cost of fuels treatments while providing a wood supply to support local sawmill infrastructure.

Decision

I have decided to select Alternative 1, the Proposed Action, for implementation. Based on review of the project in the field, evaluation of the Alternatives in the Raintree Forest Health Project Final Environmental Assessment (EA), the supporting documentation and a review of public comments, once implemented, Alternative 1 will effect an immediate change in potential wildfire behavior within treated stands and across the project area, by reducing the rate of spread and the intensity of fire by reducing hazardous fuels on approximately 9,144 acres of National Forest land.

My selection of Alternative 1 considers the public comments received in response to the Scoping Notice and circulation of the Preliminary Environmental Assessment, public collaboration field trips, and discussions with the Interdisciplinary Team (ID Team). Alternative 1, as well as the non-selected Alternatives, are described and analyzed in the Raintree Forest Health Project EA. In making this decision, I intend to implement all resource protection design criteria identified for Alternative 1 in the EA. Previous, similar treatments on similar forest lands have received broad, local public support.

Summary

Alternative 1 best meets the purpose, need and overall project objectives. It implements the LRMP by improving the fire resiliency and overall forest health within the project area on a sufficiently large area as to realistically improve the future prospects of having a sustainable forest condition. The achievement of a more sustainable forest condition better protects and maintains forest related

resources, including improved watershed conditions, improved wildlife habitat and enhanced forest health.

Any action, significant enough to truly make a change in the future trajectory of forest conditions and reduce the risk of large, high intensity wildfires on a landscape basis will inherently have some short-term and perhaps long-term risks of unwanted effects, such as loss of wildlife habitat. I am sensitive to these concerns and I have considered the question of not only how much treatment is too much, but conversely at what point is a planned treatment level too little to actually change fire behavior and improve forest health on a landscape basis. I must balance predicted risks and expected benefits.

Some have suggested that we proceed with more caution, in effect, do less than what is proposed in Alternative 1. However, too light a touch may result in inadequate reduction of fire risk over the landscape or provide limited benefits that will not persist for a long enough period to be effective and efficient over the long-term. Also, the large size of the Placerville Ranger District, and the overwhelming backlog of overly dense forests at high risk of stand replacing fire makes it imperative that we effectively treat fuels by doing enough work in a single entry in a project area to make a significant improvement with lasting benefits that will persist for at least a decade, rather than doing less work each time, but more frequently.

The risks associated with large, high intensity wildfire are also apparent to me. Large wildfires regularly occur on the Eldorado National Forest and there is ample evidence of the resource impacts caused by large high-intensity fires like the Fred's, Power, Pilliken, Icehouse, Cleveland, Wrights, and others that have burned on the district over the last half century. Of first concern, is the risk to human life and safety. Wildland fire suppression crews are experiencing more extreme fire behavior in places like the Raintree project area where forest fuels have accumulated unabated for decades. The treatments proposed in Alternative 1 are designed to moderate fire behavior in treated stands, reduce the rate and extent of spread of high intensity fire and provide more areas where fire crews can safely fight fire.

Large wildfires affect other resources, in variable and complex ways. Though conditions following large intense fires may favor some species (e.g. those that need early seral vegetation or dead trees), many of the adverse resource impacts caused by high intensity wildfire are not easily mitigated or repaired once they have occurred. Adverse impacts to watersheds, wildlife habitat, human safety, infrastructure and the many other environmental benefits of a healthy forest can persist for decades or centuries. It is preferable to prevent large scale, high intensity fires or to moderate their intensity by reducing fuel loads in individual stands and limiting their spread across the landscape by implementing the SPLAT¹ concept.

I have decided that on this project the risks are reasonably predictable and can be effectively mitigated as detailed in the Alternative. For this project, I believe the risks have been recognized, analyzed and effectively mitigated.

¹ Strategically placed area fuels treatments are non-overlapping treatment areas, spatially positioned to efficiently and effectively change fire behavior at the landscape scale. Conceptually, SPLATs are intended to slow fire growth and modify behavior while minimizing the amount of treated area required. The SPLAT arrangement changes fire behavior by forcing the fire to repeatedly flank around areas of treated fuels. Thus, the rate of growth of the fire is slowed, and its intensity and severity reduced. The locations of the treatment areas emphasize actions needed to make SPLATs effective in terms of interrupting wildfire rates of spread and burn intensity.

I believe Alternative 1 adequately addresses environmental and social concerns when considered in the context of all the multiple management goals related to managing the Eldorado National Forest. It provides the best mixture of benefits for the associated costs. It moves 9,144 acres of forest land on a trajectory toward the desired condition for the Raintree project area. The fuel treatments and other management actions on this project, in conjunction with the fuel reduction treatments that have occurred on other projects in the vicinity will move the affected landscape towards the broad, overall objective of reducing fire risk to the forest resources and local communities. It would also reduce tree densities and promote the desired size class distribution and a mosaic of vegetative structure in an uneven-aged forest.

Rationale for the Decision

This section describes my rationale for my decision to select Alternative 1 as the preferred method of achieving the purpose and need for the project as stated in the Raintree Forest Health EA (EA, pages 3-8).

The factors I considered in my decision included the degree to which each of the Alternatives achieved the purpose of the proposed project, as well as the degree to which the issues and concerns identified throughout the scoping and National Environmental Policy Act (NEPA) planning process were addressed. I considered recommendations and concerns brought forward from members of the public in response to the circulation of the Preliminary Environmental Assessment (EA, Appendix A) in addition to public collaboration field trips.

Alternatives 3, 4 and 5 were specifically developed and analyzed in detail in response to comments received during public scoping and comment periods. As a result of considering and analyzing five alternatives in detail, I am satisfied that the Raintree Forest Health Project EA explored a reasonable range of alternatives and appropriately disclosed the direct, indirect, and cumulative environmental effects. (EA, pages 10-28)

Three additional alternatives were considered as a result of public comments, but eliminated from detailed study because they will not meet the Purpose and Need for the project because of a lack of assurance that the alternatives will create stand conditions that will allow post-harvest surface fuel treatments and because of their extremely marginal economic feasibility (EA, pages 24-28).

All action alternatives are tiered to and are in compliance with the Eldorado National Forest Land and Resource Management Plan (USDA Forest Service 1989), as amended.

No single factor or concern entirely prevailed in determining my choice of the selected Alternative, although I assigned greater importance to certain factors than to others. Overall, my principal concern is the clear need to protect the basic resources, primarily soil, water, wildlife and vegetation, from the potential effects of high intensity wildfire as well as from the predicted adverse effects of our proposed activities. The over-riding objective of this project is to improve forest health and reduce the risk and adverse effects of a potential high intensity wildfire. The emphasis upon management actions designed to reduce the adverse effects of wildfire in California and throughout the west is supported by both national policy and direction.

I am familiar with the tremendous resource damage and rehabilitation challenges that inevitably follow in the aftermath of major wildfire events. I also recognized that the action Alternatives will

result in various levels of hazardous fuel reduction that will meet fuels objectives to achieve the Purpose and Need for the project if implemented as described in the EA.

I am aware we received comments advocating that we harvest no trees larger than certain specified diameter (DBH- Diameter at Breast Height) classes, i.e. 10-inches, 12-inches, 16-inches, and 20 inches. I am also aware we received comments proposing the girdling of trees 20-29.9 inches DBH and left in place as wildlife snags that would have been marked and harvested as in Alternative 1. In fact, Alternatives 3, 4 and 5 were designed on the basis of not removing trees larger than 10 inches, 16 inches, and 20 inches, respectively (EA, pages 23-24).

From a fuels treatment standpoint, it is critical to note that the treatment of the non-commercial-sized ladder fuels (biomass) and the surface fuels treatment work will be primarily funded by revenues from the sale of commercial-sized trees (9.0-29.9 Inches DBH) that will be harvested in the action Alternatives.

Since Alternatives 3, 4, and 5 will retain all trees greater than 10 inches, 16 inches, and 20 inches, respectively, we will not be receiving as much revenue from the sale of more valuable larger trees to support the cost of treating surface fuels and non-commercial biomass. Though removal of some trees over 20 inches diameter (Alternative 1) will have relatively little additional benefit moderating fire behavior, the value of cutting approximately two additional trees per acre (averaged over the project area) between 20-30 inches DBH significantly increases revenue available to treat surface fuels, young plantations and brush fields. Therefore, implementation of Alternatives 3, 4 or 5 will not as effectively meet the purpose and need for the project as Alternative 1.

The economic analysis completed for this project revealed sizeable differences among the alternatives in terms of projected revenues generated that can be used to accomplish the follow-up fuel treatments and other proposed activities (EA, Table 4, page 28 and Silviculture Report Appendix F). Alternative 1 will generate approximately \$989,000 more than Alternative 3, \$970,000 more than Alternative 4 and \$809,000 more than Alternative 5. These funding differences directly translates to a much greater likelihood of accomplishing the needed follow-up surface fuels treatment and other project activities in a timely fashion under Alternative 1, by funding treatments of surface and ladder fuels by tractor piling, burning, road reconstruction, reforestation, and prescribed understory burning. It is likely that funds generated by the sale of commercial trees in Alternative 1 will fund 100% of the follow-up treatment activities based on the economic analysis.

The Biological Evaluation and Assessments (BE/BAs) for this project includes an analysis of effects upon botanical, terrestrial and aquatic species, including all threatened, endangered or sensitive species that will be potentially affected by the various Alternatives. The BE/BAs are exhaustive and cannot be briefly summarized except to say that the project may affect individuals, but is not likely to result in a trend toward Federal listing under the Endangered Species Act or a loss of species viability for any Region 5 sensitive species. (Terrestrial Wildlife BE/BA, Plant BE, and Aquatic BE/BA).

I realize that we have received comments about potential detrimental effects upon the California spotted owl as a result of implementing this project using the management standards and guidelines contained in the Record of Decision for the 2004 Sierra Nevada Forest Plan Amendment (SNFPA). Some of the comments reference specific research papers and include far-reaching conclusions about the potential adverse effects upon the California spotted owl by implementing the 2004 SNFPA. The Terrestrial Wildlife BE/BA and Management Indicator Species (MIS) report for the Raintree

Forest Health Project fully addresses these concerns. In support of the conclusions in the Raintree terrestrial wildlife BE/BA and MIS report, the results of the 2006 exhaustive review (summarized in the May 24, 2006 Federal Register) by the U.S. Fish and Wildlife Service very succinctly summarizes the best available science and the anticipated range-wide effects upon the spotted owl as a result of fuel treatments being conducted Sierra Nevada-wide under the SNFPA (2004). The U.S. Fish and Wildlife concluded that:

“it was anticipated that there would be short-term adverse effects from certain fuels treatment activities, but long-term benefits from reduced wildfire risk are expected. Catastrophic wildfire appears to be the greatest potential threat to the California spotted owl and fuels-reduction treatments are a necessary measure to reduce that threat.”

The BE/BA for sensitive plants and aquatic species for this project includes an analysis of effects upon sensitive plants and aquatic species known or suspected to occur on the Eldorado National Forest. In brief the BEs/BAs determined that the project may affect individuals, but is not likely to result in a trend toward Federal listing under the Endangered Species Act for any Region 5 sensitive species. In addition, it is expected that there will be no effect upon any threatened or endangered plant species. (BE for Plants, BE/BA for Aquatic Species)

Alternatives Considered

Eight (8) Alternatives were considered; five (5) of which were analyzed in detail in the EA.

Alternative 1 is described above as the Selected Alternative.

Alternative 2 is the No Action Alternative. It was not selected because it did not achieve the purpose and need for this project.

Alternative 3 is similar to Alternative 1, but limits the maximum diameter of selected understory trees to be removed in the proposed mechanical thinning units to 10-inches DBH. Under this alternative, there would be no gap expansion, no planting and no Sporax application. This alternative would provide significantly less funding for the accomplishment of post thinning fuels treatments such as machine piling and pile burning. The alternative would rely on a larger amount of appropriated funds to accomplish needed fuels work. Without the treatment of post-thinning surface fuels, fire behavior could be more severe than had thinning not occurred.

Alternative 4 is similar to Alternative 1, but limits the maximum diameter of selected understory trees to be removed in the proposed mechanical thinning units to 16-inches DBH. This alternative provide would provide significantly less funding for the accomplishment of post thinning fuels treatments such as machine piling and pile burning. The alternative would rely on a larger amount of appropriated funds to accomplish needed fuels work. Without the treatment of post-thinning surface fuels, fire behavior could be more severe than had thinning not occurred.

Alternative 5 is similar to Alternative 1, but limits the maximum diameter of selected understory trees to be removed in the proposed mechanical thinning units to 20-inches DBH and those trees 20-29.9 inches that will have been marked and harvested as in Alternative 1, will be girdled and left in place as wildlife snags and future down log recruitment. This alternative would provide significantly less funding for the accomplishment of post thinning fuels treatments such as machine piling and pile burning. The alternative would rely on a larger amount of appropriated funds to accomplish

needed fuels work. Without the treatment of post-thinning surface fuels, fire behavior could be more severe than had thinning not occurred.

Alternatives Considered, but Eliminated From Detailed Study

Three Alternatives (Alternatives 6, 7 and 8) were considered but eliminated from detailed study. Duplication within the existing range of alternatives was the rationale for not analyzing the alternatives in detail. Each will accomplish fuel treatments to some level less than Alternatives 1, due to acres forgone and because of a lack of revenue generated to treat additional fuel treatment acreage. The Alternatives are considerably less economically practical than Alternative 1. An economic analysis comparing Alternatives 1 through 8 was developed (Appendix F, Silviculture Report). These alternatives did not produce any or only relatively minor amounts of sawlog volume needed to support sawmill infrastructure and in the case of Alternatives 6, there was a question of implementation feasibility because of the retention of relatively dense stands of timber that could preclude mechanical operations.

Public Involvement

The project proposal was listed in the Eldorado National Forest Schedule of Proposed Actions (SOPA) each quarter since July 2008. The project proposal was provided to the public and other agencies (totaling 12 groups or interested parties) for comment during scoping on August 26, 2009. On May 7, 2010, another scoping notice was provided to the public and others for additional comments due to changed conditions of the proposed project. (See scoping notice and mailing list in the Project Record). Three individuals responded to the scoping notice.

As part of the public involvement process, the Placerville Ranger District initiated post-scoping stakeholder meetings and field trips on August 3, 2010 and October 22, 2010. Stakeholders involved included representatives from the El Dorado County Fire Safe Council, Sierra Forest Legacy, the forest products industry, and Forest Service resource specialists. (See meeting notes in the Project Record (PR)).

A Preliminary Environmental Assessment (PEA) was mailed to the public and a legal notice published in the Mountain Democrat newspaper on March 3, 2011. A total of seventeen PEA packages were mailed. Six timely comment letters were received during the 30-day comment period to the PEA. Forest Service responses to public comments on the Raintree Forest Health Project PEA are located in Appendix A. The District also provided an opportunity for the public to continue their involvement with the Raintree project in the form of a collaboration held on June 24, 2011.

Finding of No Significant Impact

The direct effects of the proposed action are limited to impacts in the immediate project area.

This project is designed to make an immediate change in potential wildfire behavior by reducing the rate of spread and intensity of fire; to maintain vegetation conditions that allow fires to burn with lower intensities in surface fuels, providing a good opportunity for fire crews to stop the fire spread quickly; reduce stand densities to improve forest health; and, to protect adjacent landowners, California spotted owl and northern goshawk nesting and foraging habitat from wildfire damage. It is expected that the project will be implemented and completed within approximately 5 years. Short-term adverse effects will be mitigated through implementation of Best Management Practices and Design Criteria for the project (EA, pages 13-23).

Mitigation measures have been incorporated into the Proposed Action. These mitigation measures include, but are not limited to: imposing a limited operating period for ground disturbing activities from March 1 to August 15 for California spotted owl, flagging cultural resources for protection during ground disturbing activities and prescribed burning, and maintaining late seral forest habitat. Long-term adverse effects are not expected. After considering the environmental effects described in the attached Environmental Assessment (EA), I have determined that these actions will not have a significant effect on the quality of the human environment considering the context and intensity of impacts (40 CFR 1508.27). Thus, an environmental impact statement was not prepared.

I base my finding on the following:

1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

Beneficial effects were not used to offset adverse effects. In the absence of beneficial effects, no adverse effects will be significant even when considered all by themselves. (EA, pages 32-79)

2. The degree to which the proposed action affects public health or safety.

The fuel treatments are designed to increase the efficiency of fire suppression efforts and reduce risks to firefighters, facilities and structures, water quality, and natural resources directly on 9,144 acres and indirectly through reduced rates of fire spread and intensity on the rest of the project area. (EA, pages 74-77)

3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

The proposed action is located on ridgetops and mid-slope but not in the proximity to any parklands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas, therefore none will be impacted. Cultural resource surveys have been completed and 49 sites were identified within the project area. Design criteria will prevent impacts to existing sites and provide protection for new sites if discovered during project implementation. The proposed action will not pose adverse effects on historic or cultural resources. The proposed action is non-significant because no unique characteristics will be impacted. (EA, pages 61-62)

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.

The proposed project follows the management direction in the LRMP. Potential adverse effects have been minimized to the point where there are few effects to draw controversy. Public involvement efforts did not reveal any significant controversies regarding environmental effects of this proposal. There is no substantial scientific controversy related to effects disclosed in the EA, therefore, there is no significant effect. (EA, pages 32-79)

5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

The proposed project follows the management direction in the Eldorado National Forest Land and Resource Management Plan (USDA Forest Service 1989) as amended by the 2004 Sierra Nevada Forest Plan Amendment (USDA Forest Service 2004), the Sierra Nevada Forests Management Indicator Species Amendment (SNF MIS, 2007) Record of Decision, and the Eldorado National Forest Public Wheeled Motorized Travel Management Environmental Impact Statement Record of Decision (TMP-ROD, 2008) (EA, page 10). The proposed action implements management requirements designed to reduce the potential for adverse effects. Local expertise in implementation of these types of projects minimizes the chance of highly uncertain effects, which

involve unique or unknown risks. Proposed activities are routine in nature, employing standard practices and protection measures, and their effects are generally well known.

The Eldorado National Forest has completed numerous fuels treatment projects or forest health projects over the last 12 years that had identical or very similar treatment prescriptions as those contained in the selected alternative. The Placerville Ranger District has completed 10 environmental documents covering fuels reduction projects over the past 8 years that are similar to the Raintree Forest Health Project. Cumulatively these projects have affected several thousand acres and have been subject to numerous internal and external reviews and monitoring efforts. These reviews have included individuals who were knowledgeable or experts in a variety of resource areas, including wildlife, fuels, fire, hydrology, soils, aquatic biology, botany, transportation engineering, recreation, archaeology, and silviculture. All of these projects have succeeded in making the desired change in wildfire behavior by reducing potential rates of fire spread and intensity. The effects upon the natural and human environment have been as predicted. In our experience, this type of project is not uncertain and we are not taking a unique or unknown risk, therefore this project is non-significant. (EA, pages 32-79)

6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

A precedent will not be set for future decisions with significant effects. The project in itself does not establish a precedent for future actions, although the reintroduction of prescribed fire is proposed for follow-up maintenance treatment. The affect of prescribed fire was included within the analysis for this project.

Any future decisions will require a site-specific analysis to consider all relevant scientific and site-specific information available at that time. The follow-up fuels treatments will take multiple entries to achieve desired conditions. The fuels reduction activities proposed under this project will allow for fuels to be treated more efficiently in the future, but they do not create conditions that require future action.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

The Biological Assessments and Biological Evaluations considered potential cumulative impacts of this proposal on habitat for plants, terrestrial wildlife, and aquatic species. In addition, cumulative watershed effects analysis was completed for all watersheds within the project area, which considered past, present and reasonably foreseeable future activities. These documents and analysis disclosed in the EA support the finding that this proposal will not cause significant cumulative effects on biological or physical resources, even when considered in relation to other actions. (EA, pages 32-79)

8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

The project area has been surveyed and a comprehensive Heritage Resource Report (R2009-05-03-60001) was completed. Protection of heritage resources in the area was incorporated into the proposed action through such measures as flagging and avoiding sites during project implementation. Based on the analysis documented in the Heritage Resource Report, the proposed action will not cause loss or destruction of significant scientific, cultural, or historical resources. (EA, pages 61-62)

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

The selected alternative will not jeopardize the continued existence of any fish, wildlife, or plant species potentially affected by this project and protected under the Endangered Species Act as determined by the forest botanist, forest aquatic biologist, and district wildlife biologist in the *Biological Evaluation for Plants, Biological Assessment and Evaluation for Aquatic Species, and the Terrestrial Wildlife Biological Assessment and Evaluation*. (Brown 2011, Grasso 2011 and Yasuda 2011).

10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

The proposed action was developed in accordance with and, therefore, does not threaten to violate any Federal, State or local laws or requirements for the protection of the environment (i.e. Endangered Species Act, National Historic Preservation Act, Clean Water Act, Clean Air Act, and the National Forest Management Act). Discussion in the EA of effects and the related references in the project record document that this project will not adversely affect soils, water quality, or threatened or endangered species. The proposed action is also consistent with the Eldorado National Forest Land and Resources Management Plan (1989) as amended by the Sierra Nevada Forest Plan Amendment (2004).

Findings Required by Other Laws and Regulations

The EA has been completed pursuant to Forest Service Handbook 1909.25. The EA is sufficient for me to determine whether or not to proceed with the Raintree Forest Health project.

My decision is consistent with the National Forest Management Act, as well as the Eldorado National Forest Land and Resource Management Plan (USDA Forest Service 1989) as amended by the Sierra Nevada Forest Plan Amendment Final Environmental Impact Statement (USDA Forest Service 2004).

- Streams, shorelines, lakes, and fisheries in the project area will be protected. (EA, pages 9-16)
- As shown in the EA and determined in the aquatic, terrestrial, plant biological evaluations and assessments, the viability of populations of threatened, endangered, and sensitive species will be maintained. (EA, pages 9-16)
- The protection of heritage resources has been confirmed in the EA. (EA, page 9)

Administrative Review or Appeal Opportunities

This decision is subject to administrative review (appeal) pursuant to the regulations in 36 CFR §215. Individuals or organizations who submitted comments or otherwise expressed interest in the project during the comment period specified at 36 CFR §215.6 may appeal this decision. Appeals must be filed within 45 days following the date of the published legal notice of this decision in the *Mountain Democrat* newspaper. The publication date of the legal notice in the *Mountain Democrat* is the exclusive means for calculation the time to file an appeal (§215.15 (a)), and those wishing to appeal should not rely upon dates or timeframes information provided by any other source. Notices

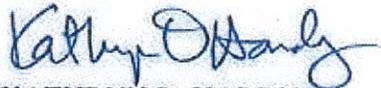
of appeal must meet the requirements in 36 CFR §215.14. A statement of appeal, including attachments, must be filed (regular mail, fax, email, hand-delivery, or express delivery) with the Appeal Deciding Officer at: Randy Moore, Regional Forester, USDA Forest Service, Regional Office R5, 1323 Club Drive, Vallejo, CA 94592, fax: (707) 562-9229. The office business hours for those submitting hand-delivered appeals are: 8:00 am to 4:00 pm Monday through Friday, excluding holidays. Electronic comments must be submitted in a format such as an email message, plain text (.txt), rich text format (.rtf), or Word (.doc) to appeals-pacificsouthwest-regional-office@fs.fed.us. In cases where no identifiable name is attached to an electronic message, a verification of identity will be required. A scanned signature is one way to provide verification.

Implementation Date

The project is planned for initial implementation in 2012. If no appeals are filed within the 45-day time period, implementation of the decision may begin on, but not before the 5th business day following the close of the appeal-filing period (36 CFR §215.15). When an appeal is filed, implementation may occur on, but not before, the 15th business day following the date of appeal disposition (36 CFR §215.15). In the event of multiple appeals, the implementation date is controlled by the date of the last appeal disposition.

Contact Person

For further information concerning this decision or the Forest Service appeal process, contact: Tim Howard, Timber Management Officer, Placerville Ranger District, 4260 Eight Mile Road, Camino, CA 95709. Phone: (530) 647-5382.



KATHRYN D. HARDY
Forest Supervisor

Date: December 12, 2011



United States
Department of
Agriculture

Forest
Service

Pacific
Southwest
Region

March 2011

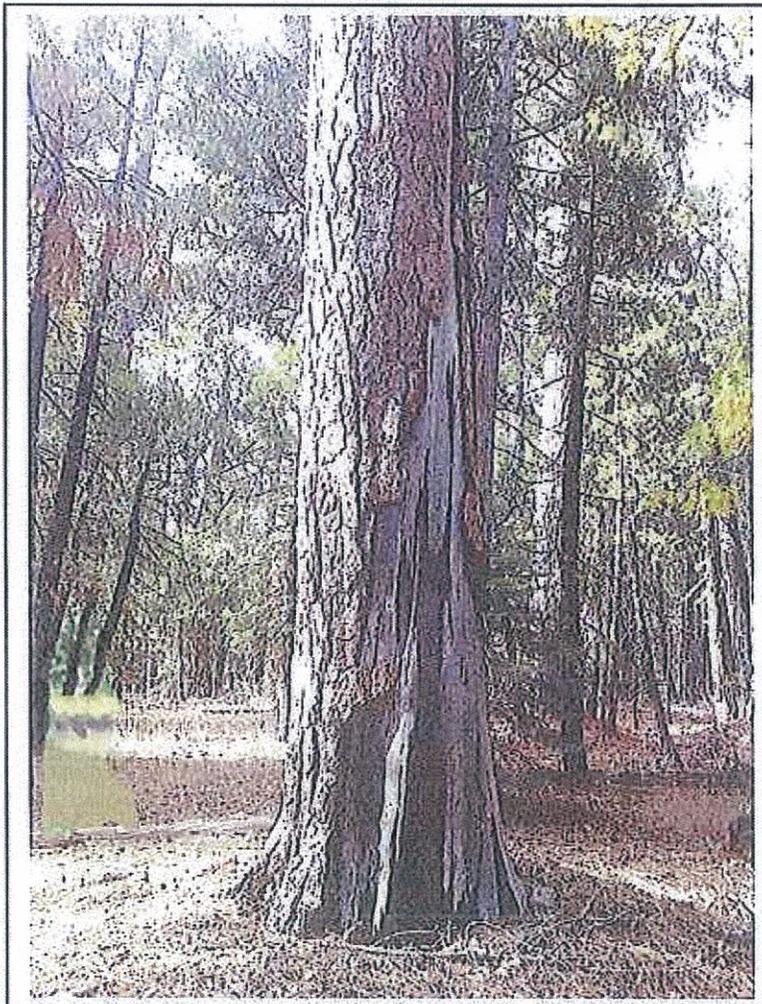
Preliminary

Environmental Assessment for

Raintree Forest Health Project



Eldorado National Forest



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INTRODUCTION

The Placerville Ranger District on the Eldorado National Forest proposes restorative and preventative treatments and management actions in order to improve the forest health and re-establish a sustainable landscape condition on public lands within the Raintree project area. The Placerville Ranger District proposes to implement activities to reduce fuel loads and fire hazards, and to improve wildlife habitat, watershed condition, and forest growth, while considering effects on other resources and activities. Treatments and other management actions would commence in 2012 and be completed by 2017. Proposed activities would include commercial and pre-commercial understory thinning of mixed conifer stands and plantations, enhancing aspen and hardwood habitat, removing hazard trees adjacent to system roads and dispersed camping areas, reconstructing and repairing system roads, grapple and machine piling, masticating brush and small trees, restoring watershed function, and prescribed understory burning.

The Raintree project area lies within the Placerville Ranger District of the Eldorado National Forest. The reader is referred to the Eldorado National Forest Resource and Land Management Plan (LRMP, 1989) and the Sierra Nevada Forest Plan Amendment (SNFPA, 2004) for an overview description of the Eldorado National Forest. The Raintree project area is situated south of Highway 50, and south of the Mormon Emigrant Trail Road, including the general area between Capps Crossing and Leek Spring Lookout. The Project Area covers approximately 9,144 acres located entirely in El Dorado County, California in T.9N., R.14 E., in all or portions of Sections 1-3, and 10-15; T.9N., R.15 E., in all or portions of Sections 3-10, and 16-21; T.10N., R.14E., in all or portions of Sections 35 and 36; and T.10 N, R.15E., in all or portions of Sections 31 and 32; M.D.B & M. Elevations range from 5,000 feet at the North Fork Consumnes River on the west edge of the project area to 6,500 feet on Baltic Ridge on the north edge of the project area. The area is accessed from Highway 50 by Sly Park Road to Mormon Emigrant Trail Road then to the North South and Mciss Roads (Refer to Location Map 1).

The attached project area map (Map 2) displays the location and treatment activities proposed in the Raintree project area. Tables 1 and 2 display proposed treatment activities on a unit-by-unit basis by SNFPA land allocation and approximate implementation dates.

PURPOSE AND NEED FOR ACTION

The purpose and need of the proposed treatment activities in the Raintree project area is to modify the forest vegetation in order to put it on a trajectory toward the desired conditions for: (1) reduced tree density; (2) sustained old forest conditions; (3) enhanced wildlife habitat; (4) reduced wildfire risk; (5) improved long-term scenic sustainability; (6) increased recreational opportunities; (7) enhanced riparian conservation areas; and, (8) maximized revenue derived from commercial products to perform essential and costly biomass removal and surface fuel treatments.

This action is needed to: (1) improve the forest health across the Raintree project area; (2) reduce the fuel loading to reduce the threat of wild fire; (3) maintain and enhance the existing old growth conifers, aspen

and oak component; (4) maintain and enhance recreation opportunities; (5) treat hazardous fuels in a cost-effective manner to maximize treatment acres under a limited budget while fulfilling the role the Forest Service has in providing a wood supply for local manufacturers; (6) provide a maintainable level of forest access while closing unneeded roads and motorized trails to enhance wildlife habitat and reduce wildlife harassment; (7) enhance and maintain Strategically Placed Area fuels Treatments (SPLA'TS)¹ designed to slow the spread of wildfire; and (8) enhance soil productivity within plantations by increasing soil cover. Additionally, there is a need to improve watershed condition and related ecosystem services by improving the conditions of several streams and riparian zones in the project area. Improvements include: maintaining or restoring the geomorphic and biological characteristics of special aquatic features within riparian zones, streams, including in stream flows, and hydrologic connectivity both within and between watersheds to provide for the habitat needs of aquatic species.

This action responds to the desired conditions, management intent, and management objective by land allocation outlined in the SNFPA ROD as displayed in Table 1-1.

¹ Strategically placed area fuels treatments are non-overlapping treatment areas, spatially positioned to efficiently and effectively change fire behavior at the landscape scale. Conceptually, SPLATs are intended to slow fire growth and modify behavior while minimizing the amount of treated area required. The SPLAT arrangement changes fire behavior by forcing the fire to repeatedly flank around areas of treated fuels. Thus, the rate of growth of the fire is slowed, and its intensity and severity reduced. The locations of the treatment areas emphasize actions needed to make SPLATs effective in terms of interrupting wildfire rates of spread and burn intensity.

**Table 1-1. Desired Future Conditions By Land Allocation
For Lands Proposed For Treatment**

Land Allocation	Desired Conditions	Management Intent	Management Objectives
<i>WUI Defense Zones</i>	<p>Stands are fairly open and dominated primarily by larger, fire tolerant trees.</p> <p>Surface and ladder fuel conditions are such that crown fire ignition is highly unlikely.</p> <p>The openness and discontinuity of crown fuels, both horizontally and vertically, result in very low probability of sustained crown fire.</p>	<p>Protect communities from wildfire and prevent the loss of life and property.</p> <p>WUI defense zones have highest priority for treatment (along with threat zones).</p> <p>The highest density and intensity of treatments are located within the WUI.</p>	<p>Create defensible space near communities, and provide a safe and effective area for suppressing fire.</p> <p>Design economically efficient treatments to reduce hazardous fuels.</p>
<i>HRCAs</i>	<p>Within home ranges, HRCAs consist of large habitat blocks having:</p> <ul style="list-style-type: none"> ▪ at least two tree canopy layers. ▪ at least 24 inches dbh in dominant and co-dominant trees. ▪ a number of very large (>45 inches dbh) old trees. ▪ at least 50-70% canopy cover. ▪ higher than average levels of snags and down woody material. 	<p>Treat fuels using a landscape approach for strategically placing area treatments to modify fire behavior.</p> <p>Retain existing suitable habitat, recognizing that habitat within treated areas may be modified to meet fuels objectives.</p> <p>Accelerate development of currently unsuitable habitat (in non-habitat inclusions, such as plantations) into suitable condition.</p> <p>Arrange treatment patterns and design treatment prescriptions to avoid the highest quality habitat (CWHR types 5M, 5D, and 6) wherever possible</p>	<p>Establish and maintain a pattern of fuels treatments that is effective in modifying wildfire behavior.</p> <p>Design treatments in HRCAs to be economically efficient and to promote forest health where consistent with habitat objectives.</p>
<i>WUI Threat Zones</i>	<p>Under high fire weather conditions, wildland fire behavior in treated areas is characterized as follows:</p> <ul style="list-style-type: none"> ▪ Flame lengths at the head of the fire are less than 4 feet. ▪ The rate of spread at the head of the fire is reduced to at least 50% of pre-treatment levels. ▪ Hazards to firefighters are reduced by managing snag levels in locations likely to be used for control in prescribed fire and fire suppression, consistent with safe practices guidelines. ▪ Production rates for fire line construction are doubled from pre-treatment levels. 	<p>Threat zones are priority area for fuels treatments.</p> <ul style="list-style-type: none"> ▪ Fuels treatments in the threat zone provide a buffer between developed areas and wildlands. ▪ Fuels treatments protect human communities from wildland fires as well as minimize the spread of fires that might originate in urban areas. ▪ The highest density and intensity of treatments are located within the WUI. 	<p>Establish and maintain a pattern of area treatments that is effective in modifying wildfire behavior.</p> <p>Design economically efficient treatments to reduce hazardous fuels.</p>

Land Allocation	Desired Conditions	Management Intent	Management Objectives
Old Forest Emphasis Areas	<p>Forest structure and function generally resemble pre-settlement conditions.</p> <p>High levels of horizontal and vertical diversity exist within 10,000 acre landscapes.</p> <p>Stands are composed of roughly even-aged vegetation groups, varying in size, species composition, and structure. Individual vegetation groups range from less than 0.5 to more than 5 acres in size.</p> <p>Tree sizes range from seedlings to very large diameter trees.</p> <p>Species composition varies by elevation, site productivity, and related environmental factors.</p> <p>Multi-tiered canopies, particularly in older forests, provide vertical heterogeneity.</p> <p>Dead trees, both standing and fallen, meet habitat needs of old-forest-associated species.</p> <p>Where possible, areas treated for fuels also provide for the successful establishment of early seral stage vegetation.</p>	<p>Maintain or develop old forest habitat in:</p> <ul style="list-style-type: none"> ▪ areas containing the best remaining large blocks or landscape concentrations of old forest and/or ▪ areas that provide old forest functions (such as connectivity of habitat over a range of elevations to allow migration of wide-ranging old-forest-associated species). <p>Establish and maintain a pattern of area treatments that is effective in:</p> <ul style="list-style-type: none"> ▪ modifying fire behavior. ▪ culturing stand structure and composition to generally resemble pre-settlement conditions. ▪ reducing susceptibility to insect/pathogen drought-related tree mortality. <p>Focus management activities on the short-term goal of reducing the adverse effects of wildfire.</p> <p>Acknowledge the need for a longer-term strategy to restore both the structure and processes of these ecosystems.</p>	<p>Establish and maintain a pattern of area treatments that is effective in modifying wildfire behavior.</p> <p>Maintain and/or establish appropriate species composition and size classes.</p> <p>Reduce the risk of insect/pathogen drought-related mortality by managing stand density levels.</p> <p>Design economically efficient treatments to reduce hazardous fuels.</p>
General Forest	Same as above	<p>Actively manage general forest areas to maintain, and enhance a variety of vegetative conditions.</p> <p>Strategically place fuels treatments to modify wildfire behavior.</p> <p>Reduce hazardous fuels in key areas to lessen the threat of high severity fire.</p>	<p>Establish and maintain a pattern of area treatments that is effective in modifying wildfire behavior.</p> <p>Reduce the risk of insect/pathogen drought-related mortality by managing stand density levels.</p> <p>Design economically efficient treatments to reduce hazardous fuels.</p>

In addition, the project area has specific conditions that include: (1) a level of vegetative, composition, and structural diversity associated with vigorous and healthy stands commensurate with the site's potential; (2) the ability to provide timber and other forest products at a sustainable level that contributes to the stability of local and regional economics; (3) a minimal amount of noxious weeds; (4) snags and down logs, and recruitment trees that are well distributed across the project area in sufficient quantity and quality to support species dependent upon these habitats; (5) low mortality associated with insects and diseases, although *Heterobasidion occidentale* root disease and dwarf mistletoe are widespread among white fir trees; (6) aggregations of oaks and aspen are present, and in good health; (7) heritage resources that are preserved and protected to a high degree of integrity (8) a transportation system providing administrative

and public access while maintaining open road densities at a level commensurate with the Eldorado National Forest Public Wheeled Motorized Travel Management Environmental Impact Statement and Record of Decision (TMP – ROD).

The difference between the existing and desired conditions defines the need for change, i.e., the need to treat the existing condition to create, or place it on a trajectory toward, the desired condition. Proposed treatments in the Raintree project area address the aforementioned need for change.

Within the vicinity of the Raintree project area, lightning, dispersed recreation use, logging operations, and off-highway vehicle use serve as potential sources of ignition for wildfire. This project is designed so that if a wildfire were to start in the project area the treatments within SPLATs would increase the effectiveness of fire suppression efforts, and substantially decrease the risk to life and property. The project is located in an area classified as moderate to very high hazard and low to extreme fire risk as determined by the ENF Fire Hazard Map (Eldorado National Forest Landscape Analysis, 1996).

The principle forest cover types found in the project area are Sierra Nevada Mixed Conifer and Ponderosa/Jeffrey Pine. The major species mixed in this forest cover type are white fir, Douglas fir, ponderosa pine, Jeffrey pine, sugar pine, lodgepole pine, incense cedar, quaking aspen, and oaks. The understory is dominated by dense, shade tolerant white fir and incense cedar samplings and small trees. The average age of the natural stands within the project area is generally around 130 years, if the dense understory (which is about 30-80 years of age) is not considered. Scattered across the project area are many trees that exceed 300 years of age.

Historically, at the lowest elevations or higher up on the drier south or west aspects and ridges within the project area, fires were generally frequent, ranging from fire return intervals of 5 to 15 years, with individual sites sometimes burning two years in succession. With this type of fire frequency, the fire intensity and severity were most likely low because of lack of time to accumulate very much fuel between fires. Fire suppression, starting in the early 1900s has changed these historic fire intervals, resulting in a change in species composition, structure, and density.

Current vegetative conditions in the Raintree project area differ markedly from the historic condition and most of the current stands exceed the historical range of variability in terms of ecosystem structure and process. Multiple decades of fire exclusion, grazing by domestic livestock, and logging have altered fire regimes, fuel loadings, and vegetation composition and structure. As a result, the number, size, and intensity of wildfires have been altered from their historical range. The risk of losing key ecosystem components is high. The dense forest conditions within the project area make the area prone to the risk of a stand-replacing catastrophic wildfire.

Unhealthy conditions are indicated by increased densities of trees, higher levels of insect-related tree mortality, and an accumulation of ground and ladder fuels within stands in the project area. Dense, closed canopied forests tend to favor shade tolerant white fir and incense-cedar, and to exclude shade intolerant ponderosa pine, oak, and sugar pine. The shade tolerant species generally are more susceptible to mortality from fire, and form dense understory thickets, which act as fuel ladders to the larger, overstory trees. Dense stands demand more water and other limited resources and, as a result, over-dense stands are less resistant to insect and disease-related attack, especially during periods of extended drought. The structure of the current forested landscape represents an unstable, unsustainable, and therefore, undesirable departure from the historic landscape for this area.

Forest Health Protection personnel performed field surveys in August 2009 and 2010 to assess existing insect and disease conditions in plantations and natural stands proposed for treatment. Key observations were: 1) Throughout the project area, white fir of all age classes were found to have extensive white fir dwarf mistletoe (*Arceuthobium abietinum* var *concolor*) infection in association Cytospora canker (*Cytospora abietis*); 2) Overstocking, vegetation density, and pole-sized (10 inch dbh and larger) trees within plantations combine to increase the risk of western pine beetle (*Dendroctonus brevicornis*) and pine engraver beetle (*Ips* species) related mortality; and, 3) The pathogen *Heterobasidion occidentale* (aka *H. annosum* "S" type) is found throughout the project area and therefore, it is imperative to reduce the establishment and spread of *Heterobasidion* root disease within mature stands identified in the Raintree project. Although some of the natural stands have been thinned or salvage logged in the past, predominantly white fir stands are expected to decrease in health and vigor over time because of insects, *Heterobasidion* root disease, and other disease pathogens. Without treatment, infected stands would continue to exhibit tree mortality conversely increasing fuel loading, contributing to severe fire behavior.

The 1,313 acres of existing plantations within the Raintree area were planted primarily with Jeffrey pine. Plantations established during the early 1960s, 1980s, and 1990s have a low to high component of competing brush species (Greenleaf manzanita-*Arctostaphylos patula*, Bitter Cherry - *Prunus emarginata*, Decrbrush - *Ceanothus integerrimus*, and white-thorn - *Ceanothus cordulatus*), and natural regeneration of shade tolerant conifers (incense cedar and white fir). Based upon existing stocking levels and stand densities of conifer plantations within the project area, inter-tree competition is extremely high with a relatively high risk of insect epidemics coupled with low growth rates of individual trees.

In meeting the purpose and need for this project, standards and guidelines for treatment activities and resource protection would be adhered to during project implementation. These standards and guidelines are described in the LRMP and SNFPA.

DECISION TO BE MADE

Given the Purpose and Need for Action, the Eldorado National Forest Supervisor would review the Proposed Action, the other alternatives, and their impacts to the resources in order to make the following decision:

- Whether or not the Raintree Forest Health project would proceed as proposed in the Proposed Action.
- Whether or not the Raintree Forest Health project would proceed as described in one of the Alternatives to the Proposed Action.

PUBLIC INVOLVEMENT

The project proposal was listed in the in the Eldorado National Forest Schedule of Proposed Actions (SOPA) each quarter since July 2008. The project proposal was provided to the public and other agencies (totaling 12 groups or interested parties) for comment during scoping on August 26, 2009. On May 7, 2010, another scoping notice was provided to the public and others for additional comments due to changed conditions of the proposed project. (See scoping notice and mailing list in the Project Record).

Three individuals responded to the scoping notice. Important issues were raised; therefore, alternatives other than the Proposed and the No Action alternatives were fully developed for analysis.

ISSUES

An issue is a point of debate, dispute, or disagreement regarding anticipated effects of the proposed action. Issues may be "important" or "unimportant." Issues may be unimportant for any of four reasons: 1) the issue is outside the scope of the proposed action; 2) the issue is already decided by law, regulation, or Forest Plan; 3) the issue is irrelevant to the decision being made; or 4) the issue is conjectural and not supported by scientific or factual evidence. Important issues were used to develop reasonable alternatives to the proposed action that respond to the argument or controversy presented in the issue and substantially accomplish the purpose and need.

The following discussion documents the important issues identified during scoping and the development of alternatives to the proposed action based on those important issues.

There was a concern that the removal of trees up to 30 inches dbh (diameter breast height) is not necessary to reduce potential for severe fire and could increase the potential for severe fires. Based on information found in Omi and Martinson (2002 and 2003) and Strom and Fule (2007) studies, the commenter requested that an alternative that analyzes a 12 inch dbh limit be analyzed. To address this issue, Alternative 4 would include mechanical thinning of the understory vegetation, by cutting and removing trees between 1 and 11.9 inches dbh.

Two additional alternatives were requested by commenters. The commenters were concerned that removing trees over 20 inches dbh would adversely affect percent canopy cover and wildlife habitat. Alternative 5 would include mechanical thinning of the understory vegetation, by cutting and removing trees between 1 and 19.9 inches dbh. Alternative 6 is similar to Alternative 1, except trees over 20 inches dbh that would otherwise be marked for removal would instead be girdled or killed and left in place. Alternatives 4, 5, and 6 were considered but eliminated from detailed study because they do not meet the purpose and need. Alternatives Considered but Eliminated from Detailed Study are discussed further on pages 21-24 of this document.

TIERING AND INCORPORATION BY REFERENCE

In order to eliminate repetitive discussion and documentation, this preliminary environmental assessment tiers to the analysis of the Eldorado National Forest Land and Resource Management Plan (LRMP, 1989) as amended by the Sierra Nevada Forest Plan Amendment (SNFPA, 2004), the Environmental Impact Statement for the LRMP (1988), and the Eldorado National Forest Public Wheeled Motorized Travel Management Environmental Impact Statement Record of Decision (TMP-ROD, 2008). The following documents prepared for this analysis are incorporated by reference:

- Cultural Resources Report (Klemic, 2011)
- Terrestrial Wildlife Species Report (Yasuda, 2011)
- Terrestrial Wildlife Management Indicator Species Report (Yasuda, 2011)
- Aquatic Species Report (Grasso, 2011)
- Aquatic Management Indicator Species Report (Grasso, 2011)
- Hydrology Report (Markman 2011)

- Soils Report (Nicita, 2011)
- Silviculture, Human and Ecological Risk Assessment-Sporax, Climate Change, and Economic Analysis Report (Howard, 2011)
- Fuels and Fire Report (Riesenhuber, 2011)
- Transportation Analysis Report (Koltun, 2011)
- Landscape and Visuals Report (Jowise, 2011)
- Recreation Report (Bounds, 2011)
- Forest Health Protection Report - Insects (Bulaon, 2011)
- Forest Health Protection Report – Diseases (Mac Kenzie, 2011)
- Sensitive Plants and Noxious Weeds Report (Brown, 2011)

DESCRIPTION OF ALTERNATIVES

Alternative 1 (Proposed Action)

Conduct commercial thinning of conifers (10-29.9 inches dbh) on approximately 3,406 acres in natural stands and selected conifer plantations. The silvicultural prescriptions would be a combination of thinning-from-below, perimeter thinning ladder fuels around large old growth conifers, and, oak trees and aspen groups. Treatment activities would be accomplished using the whole tree yarding system with ground-based mechanized equipment (low-impact feller-buncher, and conventional skidding equipment). Where necessary during initial harvest, small trees and brush (4-9.9 inches dbh) would be mechanically thinned to facilitate sawlog and biomass removal. (Units: 619-2, 4, 175, 178, 179, 181 to 183, 187 to 191, 193-202, 204, 205, 207 to 211, 213 to 245, 247 to 255; Units 620-152, and 153; 621-46 to 50; Units 623-142, 145-147; and, Units 624-301 to 303).

In all or portions of treatment units that occur within California spotted owl home range core areas (HRCA) that do not overlap with SPLATs, cut trees would be limited to trees 19.9 inches dbh and smaller. (Units 619-183, 619-189 to 191, 619-195, 619-196, 619-201, 619-208 to 215, 619-217, 619-219, 619-222, 619-226 to 229, 619-235, 619-240, 619-242, 619-245, 619-247, 619-248, 619-252, 619-255, and 621-46 to 49). (Refer to Tables 1 and 3).

In selected natural stands where *Heterobasidion occidentale* (aka *H. annosum* "S" type) is infecting white fir, create gaps with legacy leave trees on approximately 60 acres. Gaps vary in size from 1/2 to 5 acres. Legacy leave trees would be all trees greater than 30 inches dbh and additional trees between 20-30 inches dbh to attain a maximum of 10 trees per acre. Species preference for legacy trees would be Jeffrey pine, sugar pine, Douglas fir, incense cedar, and then white fir. Vegetation Retention Islands (VRIs) are non-treatment areas located within natural stands and plantations that provide vertical and horizontal structure to enhance the vegetation heterogeneity and maintain wildlife habitat structure within the stand. No trees within VRIs would be designated for cutting and would be protected during harvest activities. VRIs would be placed outside newly created gaps. (Units 619-199, 619-204, 619-207, 619-234, 619-237, 623-142, 623-145, and 623-146).

To prevent the spread of *Heterobasidion* root disease in dispersed camping areas and on the borders of gaps, a borax fungicide would be applied to all freshly cut white fir stumps. (Units 619-199, 619-204, 619-207, 619-234, 619-237, 623-142, 623-145, 623-146, 619-250, and 619-252).

Conduct reforestation activities on approximately 60 acres in newly created gaps (see above) by planting white pine blister rust resistant sugar pine and Jeffrey pine with varying spacing (8 x 8 feet to 15 x 15 feet) between seedlings outside the dripline of legacy leave trees. To limit competition from brush species, an area about 3 to 5 feet in diameter would be cleared around the seedling at the time of planting followed up with two or three multiple treatments no more than two years apart, some within a year (Units 619-199, 619-204, 619-207, 619-234, 619-237, 623-142, 623-145, and 623-146).

Perform machine piling (grapple or dozer), and cutting small trees and brush (1-3.9 inches dbh) with follow-up pile burning on approximately 1,687 acres to reduce ground fuels and ladder fuels. (Refer to Table 3, includes all commercial thinning units shown in the first bullet statement above).

Conduct hand cutting and piling of small trees and brush (1-9.9 inches dbh) with follow-up pile burning on approximately 91 acres in sensitive areas (RCAs, steep slopes, and dispersed recreation areas). (Units 619-188, 190, 193, 217, 227, 228, 235, 245, 246, 249, 250, 251, 252, and 253). (Refer to Table 3).

Conduct prescribed understory burning on approximately 9,144 acres. The prescribed understory burn area would actually be less because of excluded areas such as roads, cultural resource sites, RCAs, rocky outcrops, areas void of vegetation and other sensitive areas. The prescribed understory burning would occur in all natural stands, plantations, and areas not treated. Activities would include construction of firelines by hand or tractor, and hand cutting ladder fuels (trees less than 8.9 inches dbh) around large old growth conifers, oak trees, and aspen aggregations. Fire line construction would follow established guidelines for waterbar construction as outlined in the Best Management Practices. Upon completion of prescribed burning activities, the visible character of the firelines would be hidden by spreading woody debris where they intersect existing roads and trails to limit unauthorized vehicle use. Prescribed burning activities would not be conducted in plantations 619-12, 619-36, 619-39, 619-76, and 623-62.

Recruit snags and down logs by leaving individual trees or patches of tree mortality caused by prescribed understory burning activities, unless they pose a hazard to the public, woods workers, and Forest Service employees. (All areas prescribed burned as stated above).

Conduct hazard tree removal adjacent to system roads and landings, dispersed camping areas adjacent to the North Fork Consumnes River, and within treatment units, for public, woods workers, and Forest Service employee safety. Dead and unstable live trees that do not present a hazard would be retained. (All system roads open to the public).

Enhance and maintain montane hardwood ecosystems dominated by California black oak, and canyon live oak by removing competing conifers (less than 19.9 inches dbh) from the understory and within 30 feet of the perimeter of existing oak trees to create openings to stimulate natural regeneration. Hardwoods greater than 4 inches dbh would require cutting and removal for harvesting equipment operability.

Enhance, maintain, and expand existing quaking aspen aggregations within the project area by removing competing conifers (less than 29.9 inches dbh) and within 30 feet of the perimeter of these aspen aggregations. Additional measures including fencing and tilling may also be incorporated in planned activities. There are approximately 30 individual aspen clones totaling about 20 acres located within the project area, natural stands and plantations that would be treated. (Applies to all units where aggregations of quaking aspen occur).

Reconstruct approximately 57 miles of system roads. Reconstruction and repair activities would involve the replacement of inadequate drainage crossings, elimination of ruts, ditch repair, installation of waterbars and dips with inadequate water runoff control, gate installation to control seasonal use or replacement of existing non-functional gates or barricades, and removal of brush and small trees encroaching on roads. (System Roads 9N16, 9N16B, 9N16D, 9N27, 9N27A, 9N27B, 9N28, 9N29, 9N30E, 9N30N, 9N30X- (in channel waterhole), 9N33, 9N67, 9N74, 9N97, 9N98, 9N98A, 9NY01, 9NY01A, 9NY01B, 9NY02, 9NY03, 9NY04, 9NY05, 9NY06, 9NY07, 9NY20, 9NY20A, 9NY23, 9NY23B, 9NY23F, 9NY25, 9NY25A, 9NY27, 9NY27W (out of channel waterhole), 9NY41, 9NY42, 10N46, 10N46H, 10N46I, 10N46K, 10N46L, 10N46M, 10N83G. Refer to Map 4). In addition to the above reconstruction activities on system road 10N46, rock aggregate would be spread on 2 miles of road surface from intersection of 9N30 to the intersection of 10N46J.

Maintain approximately 12 miles of paved system roads. Maintenance activities would include cleaning culverts, repairing drainage ditches, cutting encroaching brush along roadside edges, and patching pot holes. (System Roads 9N22 and 9N30. Refer to Map 4).

Reuse about 1 mile of existing temporary roads. After the temporary roads have served their use, they would be obliterated and ripped to alleviate soil compaction and restore infiltration. In addition, an estimated 30 existing landings used in this project would be contour ripped and scattered with woody debris to minimize erosion problems and restore infiltration.

Enhance and restore watershed conditions by physically closing approximately 47 miles of system roads previously determined to not be open in accordance with the TMP-ROD. Road closure would be accomplished by employing rock barricades or gates. (System Roads 9N16B, 9N16D, 9N27, 9N27A, 9N27B, 9N28, 9N28A, 9N29, 9N30E, 9N30F, 9N74, 9N97, 9N98, 9N98A, 9N99, 9NY01, 9NY01A, 9NY01B, 9NY02, 9NY03, 9NY04, 9NY05, 9NY06, 9NY20, 9NY20A, 9NY23, 9NY23B, 9NY23C, 9NY23D, 9NY23F, 9NY25, 9NY25A, 9NY27, 9NY27A, 9NY27W, 9NY41, 9NY41A, 9NY42, 10N46H, 10N46K, and 10N83G). (Refer to Map 2).

Enhance and restore watershed conditions by decommissioning approximately 1.3 miles of system road. Decommissioning would be accomplished through subsoiling roadbed, removing culverts, re-contouring roadbed, and hiding with woody debris. (System Roads 9NY20 and 9NY20A. Refer to Map 4)

Rehabilitate and restore dispersed recreation areas impacted by motor vehicle use by installing 565 barrier rocks to limit access in the vicinity of Meiss Road (9N30) and adjacent to North Fork Cosumnes River. Existing down logs within the dispersed camping areas would be moved and placed as natural barriers in random fashion in the open areas around the Voss Cabin Road (10N46) and four existing dispersed parking areas adjacent to 9N30 (Meiss Road) would be restored by installing rock barriers and reshaping native surface parking areas.

Three additional parking areas would be developed to increase public access and camping opportunities. (Refer to Map 5 for locations)

Large woody debris (LWD), such as root wads and trees would be placed in deficient stream channels to provide habitat for aquatic species, enhance geomorphic and biological characteristics of streams as well as associated riparian habitat. Trees would be felled into deficient stream channels to promote the natural progression of geomorphic and biological characteristics by impounding sediment, stabilizing stream banks, and facilitating the development of pools/riffle habitat. (North Fork Cosumnes River, and segments of streams within SS2, SS4, NS2, NS3, NS6, and NS8. Refer to Map 3)

Design Criteria

The following Design Criteria would be applied to any action alternative associated with this project to avoid, protect, or to minimize effects to cultural, physical, and biological resources in the project area.

Cultural Resources

Cultural resource sites within the project area boundary would be protected from ground disturbance associated with mechanical and hand treatments during all phases of implementation activities of this project. No mechanical equipment would be allowed to operate within the boundaries of an identified cultural site. Where it is necessary to remove trees from within site boundaries, the District Archaeologist would be consulted to mitigate impacts. All thinning of trees adjacent to site boundaries would be directionally felled away from the site. The sites in units or near road maintenance/reconstruction would be identified with flagging and avoided during project activities. Sites that are flammable would be avoided during prescribed understory burning and fire line construction activities. Construction of firelines would occur outside of the cultural resource site boundaries. Gaps created would avoid cultural resource site locations. All machine and hand piles would be placed away from sites at a distance such that site features would not be affected by flames and heat. Hazard tree removal on or in the vicinity of cultural resource sites would be coordinated with the District Archaeologist and would follow the guidelines for hazard tree removal included in the Sierra Programmatic Agreement.

Should any previously unrecorded cultural resources be encountered during implementation of this project, all work shall immediately cease in that area and the District Archaeologist would be notified immediately. Work may resume subsequent to approval by the District Archaeologist and implementation of additional protection measures as necessary. Should any cultural resources become damaged in unanticipated ways by activities proposed in this project, the steps described in the *Programmatic Agreement among the U.S.D.A Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Officer Regarding the Identification, Evaluation and Treatment of Historic Properties Managed by the National Forest of the Sierra Nevada, California dated 1996 (SPA)* for inadvertent effects would be followed.

Vegetation Resources and Harvest Practices

Silviculture prescriptions would comply with LRMP, SNPPA, laws, policies and regulations. Prescriptions would also apply concepts described in GTR-220. (Silviculture Report, 2011).

To maintain desired conditions for old forest habitat and species (including spotted owl home range core areas), mechanical treatments would be avoided within Vegetation Retention Islands (VRIs). These are non-treatment areas located within natural stands that would provide vertical and horizontal structure to enhance the vegetation heterogeneity and maintain wildlife habitat structure within the stand. No trees within VRIs would be designated for cutting and would be protected during harvest activities. If the VRIs are composed of trees, it must exhibit a high amount of intermingling between trees, vertical and horizontal foliage diversity, interlocking crowns, multi-species or single species composition, and variable density levels, merchantable and sub-merchantable conifers. Selection of the VRIs would vary in size and shape within the stand and over the project area, generally from 1/10 acre up to approximately 1 acre in size. VRIs would be distributed throughout the stand, randomly positioned and no closer than approximately 100-300 feet to each other to minimize uniformity. Generally, 10% (minimum) of the

gross unit acreage would be left as VRIs. The number of VRIs on a unit-by-unit basis would vary from approximately 5 up to a maximum of 60 depending on unit acreage.

Outside of VRIs, randomly distributed pockets of small trees (1-9 inches dbh), understory brush, and slash piles would be retained during mechanical treatments to provide for wildlife habitat in natural stands. These areas would be designated by the Timber Sale Administrator prior to and/or during harvest activities.

Large woody material (logs greater than 10 feet long and 16 inches in diameter at midpoint) requirements would be satisfied by meeting standards (SNFPAROD 2004, page 51) for down log retention. These large down logs would be left in place to the extent practical in treatment units and would be protected during mechanical treatment activities, and understory prescribed burning.

Standing dead trees (snags) over 15 inches dbh that do not pose a hazard for public safety, contractors, and Forest Service employees would be retained to meet snag retention standards (SNFPAROD 2004, page 51). Snags less than 15 inches dbh would be cut and removed.

Canopy cover and basal area would be retained and measured at the individual stand treatment level and would comply with SNFPA.

Re-use existing skid trails and landings where possible. In areas with designated recreation routes, use the recreation routes for skidding and hauling to minimize the extent of soil disturbance if conflicts with recreational use are acceptable. New skid trails and landings would not be placed on shallow soils without consultation with the Soil Scientist.

Commercial thinning using whole tree yarding methods would occur on slopes less than 35%. Biomass material (non-sawtimber material such as limbs, tops, and pieces less than 6 inches and 10 feet long) removed from treatment units and accumulated at landings would be disposed of by pile burning, commercial and personal firewood use, or chipped and removed to cogeneration plants.

One-end suspension of all material (whole trees, sawlogs and biomass) would occur during skidding operations to reduce ground disturbance.

Machine piling of surface fuels in treatment units would not occur on slopes greater than 35%, and in sensitive areas, such as, cultural resources sites, RCA equipment exclusion zones, shallow soils, and dispersed recreation areas. Piling could occur on slopes greater than 35% and in RCAs following consultation with the Soil Scientist, Hydrologist, and Aquatic Biologist.

Log landings would be limited to the smallest size practicable to accommodate logging operations and biomass piles.

The actual number of road miles proposed for reconstruction would be determined by the economics of the stewardship contract at the time of the sell date. If the log values are up then more dollars/mile could be allocated to be reconstructed and if the log values are down then reconstruction miles would be proportionally less.

To control the spread of *Heterobasidion occidentale*, borax fungicide would be applied at a maximum rate of one pound per 50 square feet on freshly cut stump surfaces in accordance with product guidelines. Granular borate would be applied soon after felling. Complete coverage of the stump would be required,

including exposed side areas and any splinters. Application would be on white fir stumps that are 14 inches in diameter and larger, and within 30 feet from the outside boundary of gaps and leave islands.

Fire and Fuels

All burning activities would adhere to pertinent air quality regulations. Smoke emissions would be minimized by following Best Available Control Measures (BACM). A smoke permit administered by the local County Air Resource Agency would accompany burn plans. For this project the Eldorado County Air Pollution Control District would issue the permit. To reduce effects of prescribed burns on air quality, smoke control and monitoring measures would be identified in the Smoke Management Plan that would be prepared prior to burning. The Smoke Management Plan would identify potential smoke impacts on Class 1 airsheds and populated communities/areas that may be impacted. Desired and acceptable wind directions for smoke travel, and mitigation strategies would be included in the smoke management plan. The Forest Service would contact the county prior to burning to notify the planned amount of acres to burn on a given day as well as the burn location. Burning would be conducted on the basis of whether the county grants or denies burn approval. Actual acreage burned would be submitted to the county upon completion of each days burning.

Burn piles with larger materials would be cured for a minimum of 90 days. Smaller sized material would cure for 30 to 45 days to reduce the duration of smoke emissions. For prescribed burning, there would be no ignition within 25 feet of the edge of intermittent and ephemeral streams, and special aquatic features. For perennial streams, no ignition within 100 feet of the edge of the streams would occur. This restriction does not apply to draws and swales. Fire lines within Riparian Conservation Areas (RCAs) would be constructed with hand tools only and would be rehabilitated after prescribed fire operations are completed and includes construction of water bars and raking of fine organic material over bare mineral soil. Water bar construction would be installed based on the following chart:

Percent Slope	Feet
1-6	250
7-9	150
10-14	125
15-20	60
21-40	30
Greater than 40	15

For skid trails and firelines terminating at roads or OHV trails, two additional cross ditches would be required; one cross ditch at 30 feet from the intersection on all slopes and a second cross ditch 100 feet from the intersection for slopes less than 10 percent and 60 feet for slopes greater than 10 percent.

Depending on the current weather, fuel loading, and smoke conditions, one or more prescribed fire treatments may be required to achieve the desired fuel loading.

Post-harvest machine piling and burning of existing and operations slash would occur as necessary to reduce surface fuels in preparation for the reintroduction of prescribed fire. Pile burning would be conducted by Forest Service crews and would occur the first fall following piling in which burn prescriptions are met. Fire would be allowed to creep between piles and into VRIs and RCAs during burning. Follow up prescribed burning would occur approximately 2-7 years after the pile burning is completed.

In preparation for prescribed fire, perimeter line construction would be needed where roads, trails, skid trails or natural barriers are absent. This may involve hand cutting of vegetation including trees up to 6-inch diameter, pruning, and scraping a bare soil line, or where consistent with other design criteria, line construction with a D-6 or smaller dozer. Fire lines within Riparian Conservation Areas (RCAs) would be constructed with hand tools only and rehabilitated after burning by construction of cross ditches and the raking of fine organic material over bare mineral soil. Location and rehabilitation of firelines would be approved by the project hydrologist or aquatic biologist. Additionally, upon completion of burning, all fire control lines within view of roads open to the public would be naturalized after completion of project work to discourage motor vehicle travel off of designated routes. Due to considerable variability in vegetation types, ages of plantation trees, brush density, and existing surface fuels, the prescribed burn plan would incorporate various ignition techniques to prevent mortality of younger or thinner barked species. To prepare the plantations for prescribed fire, it may be necessary to cut brush and trees (up to 8.9 inches dbh), followed by piling and pile burning before prescribed burning activities are initiated; and, in some instances, only lopping and scattering small trees and brush would be necessary. Acceptable mortality in plantations would be less than 30 percent. If burning conditions are such that mortality would be expected to exceed 30 percent, firelines would be cut around the plantations in order to exclude them from the prescribed burn. All trees and brush killed by prescribed burning activities shall be left in place for wildlife purposes. Maintain 70% soil cover in plantations: 619-9, 619-17, 619-18, 619-19, 619-21, 619-23, 619-24, 619-27, 619-29, 619-30, 619-32, 619-34, 619-35, 619-41, 619-42, 619-43, 619-44, 619-54, 619-56, 619-57, 619-48, 619-72, 619-74, 619-81, 619-87, 619-90, 619-91, 619-92, 619-100, 619-110, 619-203, 621-4, 621-6, 621-68, 621-69, and 624-17.

Terrestrial Wildlife

A limited operating period (LOP) for California spotted owls from March 1 through August 15 would restrict project activities for units that are located within ¼ mile of spotted owl activity centers, unless field surveys confirm that owls are not nesting.

A limited operating period (LOP) for northern goshawks from February 15 through September 15, would restrict project activities unless field surveys confirm that owls are not nesting.

Aquatic Wildlife and Resources

Water holes in the vicinity of the project would be inspected annually by a fisheries biologist for existing aquatic species and aquatic dependent species before water withdrawal for dust abatement. A Forest Service approved screen covered drafting box, or other device to create a low entry velocity (Riparian Conservation Objective (RCO) #4, SNFPA ROD).

Botanical Resources

Aquatic veined lichen (*Peltigera hydrothyria*), occurs within the proposed project area (Streams NS-4 and NS-10). To maintain current stream shading overstory canopy within 100 feet of the occurrence would not be altered by project activities. Project botanist would be consulted prior to initiation of road maintenance within 100 feet of drainages with aquatic veined lichen. Should any new TES species be located during the proposed project, available steps would be taken to evaluate and mitigate effects.

Known noxious weed occurrences (List-A species) within the project area would be flagged including the two populations of rush skeletonweed adjacent to unit 619-227 and system road 9N30. Mechanical disturbance, vehicle parking, and staging would be excluded from these invasive plant infestations to

prevent further spread. Should any new noxious weeds be located during the proposed project, available steps would be taken to evaluate and mitigate effects.

Two occurrences of Pleasant Valley Mariposa lily (*Calochortus clavatus* var. *avius*) are within 500 feet of project area and adjacent to units 623-147 and 623-145. Occurrences would be flagged for avoidance before project implementation.

Six acres of cheatgrass occur within project area within plantations. Equipment would be cleaned when moving from infested plantations to other units in the project area (Units 619-12, 619-36, 619-39, 619-76 and 623-62).

All off-road equipment would be cleaned to ensure it is free of soil, seeds, vegetative matter or other debris before entering the project area.

Straw or mulch used for erosion control would be certified weed-free or, if certified straw is not available, rice straw would be used. A certificate from the county of origin stating the material was inspected would be required.

Any seed used for restoration or erosion control would be from a locally collected source (ENF, Seed, Mulch and Fertilizer Prescription, 2000).

Sand, gravel, fill material, and boulders used within the project area would come from weed free sources. Forest Botanist would be consulted for sources of weed-free material.

Post-treatment monitoring of sensitive plants, noxious weed, and special habitat within the project area would be conducted following project implementation to ensure that the design criteria are effective.

Sensitive plant occurrences would be flagged and avoided before project implementation when necessary. Should any TES species be located in proximity to project locations, available steps would be taken to evaluate and mitigate effects. Any new occurrences of sensitive plants identified before or during project implementation would be flagged and avoided when necessary. Sensitive plant occurrences would be monitored after the completion of the project to ensure that the avoidance protection measures were effective. These preventative measures meet the Threatened, Endangered, Proposed, and Sensitive Plant Species standard and guideline from the 2004 SNFPA ROD.

Soil Resources

The following Best Management Practices (BMPs) would be applied to project activities: 1-3, 1-5, 1-6, 1-9, 1-10, 1-11, 1-12, 1-13, 1-14, 1-15, 1-16, 1-17, 1-18, 1-20, 1-21, 1-22, 1-25, 5-2, 5-3, 5-5, 5-6, 7-1, and 7-3 (Soils Report, Appendix B).

Recreation Resources

Five hundred and sixty-five (565) barrier rocks would be installed to limit OHV and other vehicle traffic. Rocks would be at least 36 inches by 36 inches by 30 inches high of granite parent material. They would be placed on five foot centers between rocks or two feet between edges of neighboring rocks. Rocks would be buried in soil to a depth of one third of rock height. Placement locations would be designated on the ground by Forest Service. Specific locations and numbers of barrier rock placed at each location are displayed in the Recreation and Visuals Report.

Within a 100 foot buffer from the edge of Meiss Road (9N30), enough pre-commercial conifer trees between 6-9 inches dbh would be lopped and scattered to disrupt the continuity of the forest floor. In areas where OHV traffic is currently causing degradation of the soil resources, relocate slash material to obscure and discourage further use.

Where practicable, landings and large piles of biomass would be located out of the immediate view of North-South (10N83) and Meiss (9N30) system roads.

Visual Resources

Trees that are removed within the visible foreground (approximately 100 feet from roadside edge) of Meiss (9N30) and North-South (10N83) system roads would have a maximum stump height of six inches. Large landing biomass piles within the foreground of 9N30 and 10N83 would be burned or removed within 2 years of project completion.

Riparian Conservation Areas

Protection measures and restoration activities for aquatic features and Riparian Conservation Areas (RCAs) are displayed in Table 3. Refer to Map 3 for locations of aquatic features.

Hazard trees within RCAs or the identified equipment/harvest exclusion zone would be felled and left in place, except where the Riparian Conservation Objective (RCO) analysis has recommended their removal.

Table 3. Protection Measures and Restoration Activities for Aquatic Features and Riparian Conservation Areas (RCAs) of the Rainforest Project 1.2.3

Aquatic feature	Type of aquatic feature	Width of RCA	Unit(s) or roads	Protection measures and restoration activities in RCAs	Stream condition rating / Rationale for protection measures
All aquatic features - streams, springs, wetlands, meadows etc. (Unless specified otherwise for an individual aquatic feature)	Perennial and intermittent streams	300 feet on each side of perennial streams and 300 feet surrounding other perennial aquatic features.	All Units	<ul style="list-style-type: none"> No end-lining of vegetation out of equipment exclusion zones. No ground-based equipment on slopes greater than 35 percent. No removal of riparian vegetation. New landings and the use of existing landings must be approved by the Project Hydrologist and/or Fisheries Biologist. Equipment is allowed to reach into equipment exclusion zones to remove vegetation, unless specified otherwise for an individual aquatic feature. See the <i>Soils Report</i> for areas of shallow soils where ground-based equipment would be excluded. 	Minimizes sediment delivery to aquatic features from project activities, yet allows for the removal of non-riparian vegetation and fuels near aquatic features.
		150 feet on each side of seasonal streams and 150 feet surrounding seasonal aquatic features.	Natural stands immediately adjacent to roads	Where roads are less than 100 feet from the stream, there would be an equipment exclusion zone of at least 50 feet on the uphill side of the road (as measured from the edge of the road.)	There are a number of locations where roads are less than 100 feet from a perennial or intermittent stream and an equipment exclusion zone of less than 100 feet is not adequate to protect the stream.
Ephemeral streams, draws, and swales (Unless specified otherwise for an individual aquatic feature)	Streams with numbers (NS-2 through NS-11 and SS-1 through SS-8)	150 feet for ephemeral streams.	Plantations immediately adjacent to roads	<ul style="list-style-type: none"> No ground-based equipment within 25 feet of the edge of the channel where a defined channel is present. No ground-based equipment within 25 feet of the bottom of draws and swales. 	Minimizes sediment delivery to these aquatic features from project activities, yet allows for the removal of over-abundant fuels near these features.
		150 or 300 feet	All Units	No equipment crossings of streams with numbers. (The length of these streams where this applies is shown in Map 3).	Most of these streams are moderately or severely degraded.
Streams without numbers	Perennial	150 feet	All Units where applicable	Equipment crossings of these streams are approved by the Timber Sale Administrator (TSA). The TSA would notify the resource specialists of the approved equipment crossings.	
		300 feet		No ground-based equipment within 150 feet of the edge of the feature. VRLs would be located around aquatic feature when practical.	
Springs	Seasonal	150 feet		No ground-based equipment within 75 feet of the edge of the feature. VRLs would be located around aquatic feature when practical.	
		300 feet		Hand thinning of conifers is allowed in the RCA. All other activities are prohibited.	Minor degradation of stream according to survey, but dense thickets of small conifers are fairly prevalent in the RCA.
NS-2	Perennial	300 feet	6210047000	<ul style="list-style-type: none"> Feller-bunchers can remove trees within 100 feet of the edges of the stream channel. Hand thinning of trees is allowed in the outer 200 feet of the RCA. 	<ul style="list-style-type: none"> Headwaters of stream (upper 50% of stream) of stream length is moderately degraded. Minor degradation of the stream in
			6190245000	No ground-based equipment with 100 ft. of the stream channel.	
NS-3	Intermittent	150 feet	6190245000; 6190217000	No ground-based equipment with 100 ft. of the stream channel.	

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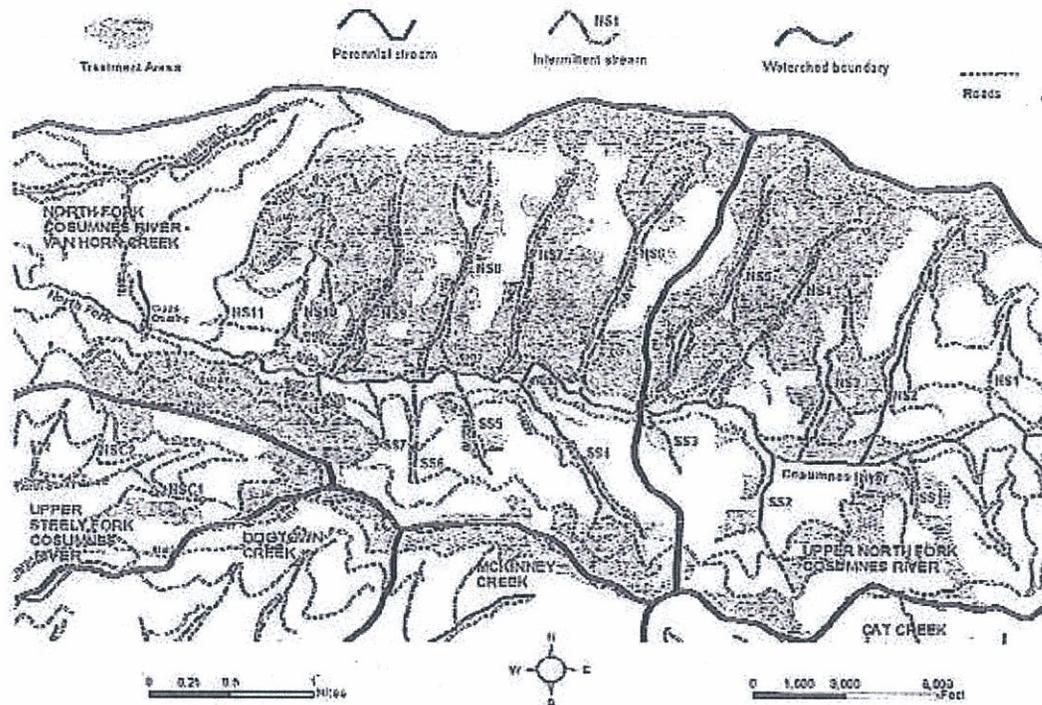
Aquatic feature	Type of aquatic feature	Width of RCA	Unit(s) or roads	Protection measures and restoration activities in RCA	Stream condition rating / rationale for protection measures
			09NY06	<ul style="list-style-type: none"> Remove road 09NY06 after completion of the project. Evaluate the road on-the-ground prior to project implementation for possible necessary road work (in addition to the standard reconstruction activities). 	<ul style="list-style-type: none"> Lower 50% of the stream length. Road 09NY06Y is contributing sediment directly into the stream.
NS-5	Intermittent segment	150 feet		<ul style="list-style-type: none"> Evaluate road 09NZ7 on-the-ground prior to project implementation for possible necessary road work (in addition to the standard reconstruction activities). 	<ul style="list-style-type: none"> Most of stream NS-5 is moderately degraded. Parcition 6190042000 is contributing excessive runoff and sediment into the stream.
	Perennial segment	300 feet			
NS-7 NS-8 NS-9	Intermittent	150 feet		<ul style="list-style-type: none"> For Units and areas of commercial thinning, there would be a 150 foot equipment exclusion zone on each side of the stream. Exceptions for Units 6190227000 and 6190228000: 75 ft. equipment exclusion where slopes are less than 30 percent. For Units and areas where only mastication would occur: equipment exclusion of 50 ft. on each side of the stream with reach-in allowed into the 50 ft. zone. 	<ul style="list-style-type: none"> Much of the length of these streams is at least moderately degraded. Units border the majority of length of these streams on at least one side of the stream.
	Intermittent	150 feet		<ul style="list-style-type: none"> For Units and areas of commercial thinning, there would be a 100 foot equipment exclusion zone on each side of the stream. For Units and areas where only mastication would occur: equipment exclusion of 50 ft. on each side of the stream with reach-in allowed into the 50 ft. zone. 	<ul style="list-style-type: none"> Much of the length of these streams is at least moderately degraded. Units border approximately 50 percent of the length of the stream.
NS-10 NS-11			09NY20A	Do not use road 09NY20A as part of the Raintree Project. Evaluate road 09NY20A for restoration	Road 09NY20A crosses a wet meadow.
	Intermittent	150 feet	10N46H	Close the road before it reaches the wet meadow area. Do not use the closed segment of the road as part of the Raintree Project. Evaluate road 10N46H for restoration.	Road 10N46H crosses a wet meadow.
	Intermittent	150 feet	10N46L	Operating period of September or October. Protection measures needed before operation. Restoration measures may be needed after operations are complete.	A 300 ft. long segment of the road is wet. The segment should be less wet in Sept. or Oct.
SS-1	Intermittent	150 feet		No ground-based equipment in the entire RCA of stream SS-1.	<ul style="list-style-type: none"> Most of stream SS-1 is severely degraded. Excessive runoff and sediment from three plantations into stream SS1. (6210067000, 6210068000, 6210069000)
Unnamed tributary of SS4	Ephemeral	150 feet	6190255000	No ground-based equipment within 50 feet of the edge of the channel. (The stream is in the middle of Unit 6190255000)	
SS8	Intermittent	150 feet	6190242000	No ground-based equipment within 50 feet of the edge of the channel.	

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Aquatic feature	Type of aquatic feature	Width of RCA	Unit(s) or roads	Protection measures and restoration activities in RCAs	Stream-condition rating / rationale for protection measures
Unnamed tributary of North Fork Coconino River	Intermittent	150 feet	619019000	No ground-based equipment within 25 feet of the edge of the stream channel.	Allows for the removal of the dense thickets of small conifers currently present in the RCA.
North Fork Coconino River	Perennial	300 feet	6190245000	No ground-based equipment in within 150 feet of the stream channel.	Prevents erosion from project activities on steep slopes adjacent to the river.
			6190250000 6190252000	Ground-based equipment would be allowed to remove cut trees, hazard trees, cull logs, and for the installation of rock barriers in the dispersed camping areas. Aquatic biologist and/or hydrologist shall be consulted prior to conducting project activities in units 619-250 and 619-252	Should allow vegetation to grow on denuded areas between road 09N30 and the North Fork Coconino River.

See Figure 1 for the location of perennial and intermittent streams and the numbering system for streams. The Riparian Conservation Area (RCA) is 300 feet on each side of perennial streams, 150 feet on each side of intermittent and ephemeral streams, and 300 feet surrounding special aquatic features (springs, meadows, wetlands, etc.). Protection measures can be changed by a Resource Specialist after an on-the-ground site visit. Notes: 1) Unit 6240301000 (Dogtown Creek watershed). GIS shows an ephemeral stream - not evident on the ground. Less than 300 ft. to the east. Land is contributing sediment to OHV trail 14E26. 2) Unit 624302000 (McKinney Creek watershed). Shallow soils and lack of ground cover is resulting in accelerated runoff/sediment into an ephemeral stream.

Map 3. Location of Aquatic Resources



Alternative 2 (No Action)

No actions would be initiated for treatment of vegetation or other activities on National Forest Service lands in the project area. This alternative provides for the comparison of the effects of "No Action" against the magnitude of the environmental effects of the action alternatives. Current management practices, such as firewood cutting, recreation, and fire suppression would continue.

Alternative 3 (Non-Commercial)

Proposed treatments would remain the same as the Proposed Action except that units proposed for commercial thinning in the Proposed Action would harvest trees 1-9.9 inches dbh. This Alternative responds to concerns that removal of trees greater than 10 inches dbh is unnecessary to prevent severe wildfire and to meet fuels objectives. However, there would be situations where trees larger than 10 inches dbh would be removed to facilitate equipment access to treat the units effectively and for landings and skid trails.

In addition, no gap expansion, planting and Sporax application would occur.

Prescriptions in Alternative 3 are designed to retain and improve the current and future number of large diameter trees and large snags that would maintain and provide habitat for the great gray owl.

The Design Criteria and Resource Protection Measures employed in Alternative 1 would be utilized for this Alternative.

Alternatives Considered, but Eliminated from Detailed Study

Three other alternatives were considered but eliminated from detailed study. Each would accomplish fuel treatments to some level less than Alternatives 1, due to acres forgone because of a lack of revenue generated to treat additional fuel treatment acreage. The alternatives are considerably less economically practical than Alternative 1, which is marginal in terms of economic feasibility. An economic analysis comparing Alternatives 1, 3, 4, 5 and 6 was completed which provides more detailed information than provided below.

A disadvantage in desired fuel treatment and post-treatment forest health conditions is associated with Alternatives 3, 4, 5 and 6 in the sense that more trees would be retained within the proposed treatment units. For Alternatives 5 and 6, this disadvantage is relatively slight when compared to Alternative 1 because the difference between these Alternatives is the retention of all trees larger than 20-inches dbh in Alternatives 5 and 6. Because Alternatives 3 and 4 would retain many more trees within all treatment units than Alternatives 1, 5 and 6, the disadvantages in terms of attaining desired fuel and forest health conditions are more problematic. From a fuels treatment standpoint it is critically important to note that the treatment of the non-commercial-sized ladder fuels (biomass) and the surface fuels treatment work would be primarily funded by the sale of saw-timber from many of the commercial-sized trees that are also actually contributing to the potential for a wildfire conflagration.

Alternative 4 (12 Inch DBH Limit)

This alternative considered, but eliminated from detailed study responds to the concerns that the removal of trees greater than 12 inches dbh is not necessary to reduce potential for severe fire and could increase the potential for severe fires. Alternative 4 treatment acreages and other proposed activities are the same as Alternative 1.

It is likely that the removal of the 12 inch dbh and smaller biomass material and sawlogs would accomplish certain objectives, such as fuels reduction. About 2,060 thousand cubic feet (CCF) of sawtimber would be harvested; whereas sawtimber removed for Alternatives 1, 5 and 6 is about 24,899 CCF, 18,133 CCF, and 18,133 CCF, respectively. Logging cost is about \$124/CCF; whereas logging cost for Alternatives 1, 5 and 6 is about \$60/CCF, \$77/CCF and \$60/CCF, respectively. The total sale value (funds that could be available for non-commercial component treatments is estimated to be about \$2,060; where the sale value for Alternatives 1, 5 and 6 are about \$989,694, \$181,271, and \$181,271, respectively. Additional funding requirements to complete fuel reduction treatments for Alternative 4 is about \$846,540; where the additional funding requirements for Alternatives 1, 5, and 6 are about \$0, \$672,329, and \$741,257, respectively. It should be pointed out that Alternative 1 is the only Alternative that would have excess revenue of about \$136,000 generated in the Stewardship Contract.

From an implementation standpoint, it is also believed that the high density of trees that would be retained that are larger than 12 inches dbh would likely prohibit effective surface fuels mechanical treatment because of reduced equipment access. Reduced equipment access adds a question of practicality in terms of being physically able to implement the lowest cost treatment method. The removal of the 12 inch dbh and smaller biomass material may reduce stand density sufficiently as to allow reasonable access for the

needed equipment on some units, however in most stands, it is expected that stand density would preclude effective or efficient equipment access if only the 12 inch and smaller trees were removed.

Alternative 5 (20 Inch DBH Limit)

A second alternative considered, but eliminated from detailed study responds to the concerns that the removal of trees greater than 20 inches dbh is not necessary to reduce potential for severe fire and could increase the potential for severe fires. Alternative 5 treatment acreages and other proposed activities are the same as Alternative 1.

This alternative was also considered on the basis of public comment requesting that an array of maximum dbh limits be analyzed.

It is likely that the removal of the 20 inch dbh and smaller biomass material and sawlogs would accomplish certain objectives, such as fuels reduction. About 18,133 CCF of sawtimber would be harvested; whereas sawtimber removed for Alternatives 1 and 6 is about 24,899 CCF and 18,133 CCF, respectively. The total sale value (funds that could be available for non-commercial component treatments is estimated to be about \$181,271; whereas the sale value for Alternatives 1 and 5 is about \$989,694 and \$181,271, respectively.

Alternative 6 (30 Inch DBH Limit with Girdling Trees 20-29.9 Inches DBH)

A third alternative considered, but eliminated from detailed study responds to the concerns that the removal of trees up to 20 inches dbh is not necessary to reduce potential for severe fire and could increase the potential for severe fires. Alternative 6 is the same as Alternative 1, except trees 20-29.9 inches dbh that would have been marked and harvested as in Alternative 1, would be girdled and left in place as wildlife snags and future down log recruitment.

Summary of Alternatives Considered, But Eliminated From Detailed Study

The economic analysis for these alternatives reveals a fairly consistent and logical pattern of revenues generated and costs incurred that are related to the sizes and numbers of trees being removed. Harvesting larger trees is less costly than harvesting more, but smaller trees for a given volume/acre. A higher volume and therefore greater value recovered from the commercial component generates more revenues that may be used to directly fund the costly surface and ladder fuel treatments.

As supplemental funding needs increase, the reliability and likelihood of obtaining sufficient appropriated funds or excess stewardship transfers from other projects decreases. The three alternatives discussed in this section all have very high costs of implementation and rely heavily upon supplemental funding, thus making their economic feasibility very marginal at best. In addition, in terms of environmental effects, the direct, indirect and cumulative effects of these alternatives are presumed to be very similar in degree and intensity as those alternatives analyzed in detail. Canopy closure, amount of ground disturbance, road reconstruction needs and fuel treatment effects would be quite similar to those described in the action alternatives.

It is important to emphasize that the proposed fuels treatment under Alternative 1 would remove no trees larger than 30-inches dbh and only approximately 2.5 trees between 20-29.9 inches dbh for every acre harvested (project record). Given the fact that, within the proposed treatment areas there currently exist

approximately 19.8 trees 20-30 inches dbh on each acre, based on stand exam information, there would be a decrease to 17.3 trees per acre within the units proposed for treatment is of relatively small consequence compared to the economic, forest health and fuel treatment benefits derived.

The economic analysis revealed very sizeable differences among the alternatives in terms of the amount of supplemental funding that would be necessary to accomplish the follow-up surface fuel treatments. Alternative 1 would generate about \$989,694 or \$988,694 more than Alternatives 3, \$987,634 more than Alternative 4, \$808,423 more than Alternatives 5 and 6. This funding difference directly translates to a greater likelihood of accomplishing the needed follow-up surface fuels treatment in a timely fashion under Alternative 1. In fact, approximately \$136,094 of excess revenue would be generated by implementing Alternative 1 that would be available as retained receipts for other Stewardship Contracts or the money would be used to complete optional Stewardship work in the Raintree project area.

Additional funding would not be required if Alternative 1 was implemented. Alternatives 3, 4, 5, and 6 would require additional funding in the amounts of \$847,600, 846,540, \$672,329, and \$741,257, respectively.

Harvesting without reasonable assurance that the necessary follow-up surface fuel treatment would occur could lead to the situation where the risk of potential wildfire would actually increase as a result of treatment. Although all the action Alternatives, except Alternative 1 does not assure that 100% of the needed funding for follow-up surface fuel treatment would be available. The economic analysis indicates that funds from the project would be sufficient to treat the surface fuels immediately if Alternative 1 was selected by the Deciding Official. Funding may be available either with retained receipts from other stewardship contracts or appropriated funding and would be a high priority in terms of funding choices.

The saw-timber that would be made available under Alternative 1 would also contribute substantially to the important role the Forest Service has in providing a wood supply for local manufacturers. This is very important to the long-term viability of the fuels program to support the local milling infrastructure. The local mills represent significant financial assets to the forest in the sense that their presence generates an economic demand for the large supply of excess trees that need to be removed to meet our fuel treatment objectives. Alternative 1 would provide approximately 12,697 MBF more of sawtimber than Alternative 3, 11,842 MBF more than Alternative 4, and 3,936 MBF more than Alternatives 5 and 6. Table 6 displays the outcomes as a result of implementing each of the action alternatives.

ENVIRONMENTAL CONSEQUENCES

This section discloses the environmental consequences of the proposal in relation to whether there may be significant environmental effects as described at 40 CFR 1508.27. Further analysis and conclusions about the potential effects are available in resource specialist reports and other supporting documentation located in the project record. The following are discussions of resources that have relevance to a determination of significance.

In order to understand the contribution of past actions to the cumulative effects of the proposed action and alternatives, this analysis relies on current environmental conditions as a proxy for the impacts of past

actions. This is because existing conditions reflect the aggregate impact of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects.

This cumulative effects analysis does not attempt to quantify the effects of past human actions by adding up all prior actions on an action-by-action basis. There are several reasons for not taking this approach. First, a catalog and analysis of all past actions would be impractical to compile and unduly costly to obtain. Current conditions have been impacted by innumerable actions over the last century (and beyond), and trying to isolate the individual actions that continue to have residual impacts would be nearly impossible. Second, providing the details of past actions on an individual basis would not be useful to predict the cumulative effects of the proposed action or alternatives. In fact, focusing on individual actions would be less accurate than looking at existing conditions, because there is limited information on the environmental impacts of individual past actions, and one cannot reasonably identify each and every action over the last century that has contributed to current conditions. Additionally, focusing on the impacts of past human actions risks ignoring the important residual effects of past natural events, which may contribute to cumulative effects just as much as human actions. By looking at current conditions, we are sure to capture all the residual effects of past human actions and natural events, regardless of which particular action or event contributed those effects. Third, public scoping for this project did not identify any public interest or need for detailed information on individual past actions. Finally, the Council on Environmental Quality issued an interpretive memorandum on June 24, 2005 regarding analysis of past actions, which states, "agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions."

The cumulative effects analysis in this Preliminary EA is also consistent with Forest Service National Environmental Policy Act (NEPA) Regulations (36 CFR 220.4(f)) (July 24, 2008).

For these reasons stated above, the analysis of past actions in this section is based on current environmental conditions.

TERRESTRIAL WILDLIFE SPECIES

The direct, indirect and cumulative effects to the terrestrial wildlife species are summarized from the Terrestrial Wildlife Biological Assessment and Evaluation (Yasuda, 2011).

Alternative 1 - Proposed Action

California Spotted Owl.

Direct and Indirect Effects. A change in habitat quality as a result of project activities is expected. In the short-term, a reduction in foraging habitat quality may occur due to a slight reduction in canopy closure and disturbance of the ground litter, potentially disrupting prey habitats. Stands would be expected to recover within one to five years as new litter falls and herbaceous and shrub vegetation returns. In the long term, the change in forest floor vegetation may increase prey habitat, especially when pockets of shrubs provide habitat for woodrats and oaks provide habitat for flying squirrel. Canopy closure is expected to recover within 10 to 20 years, potentially quicker where young hardwoods are released from competition.

The proposed action will reduce the diversity of tree height classes through thinning of understory trees and post-thinning piling of surface fuels, and will reduce canopy cover in commercially harvested stands immediately after treatment (refer to Appendix A). Although treatments will reduce habitat quality, the estimated post-treatment California Wildlife Habitat Relationship (CWHR) classification (Appendix A) of almost all natural stands treated will be within the range of what is considered suitable spotted owl habitat (moderate capability). Reduction in canopy closure from thinning may be partially mitigated by retaining untreated patches of mature forest with high canopy closure well distributed within an owl's home range (Seamans 2005). Silvicultural prescriptions for units would include maintaining late seral forest habitat acres (CWHR 5M and 5D).

Commercial thinning units would result in reductions in canopy cover, a decrease in ground level vegetation and down woody debris, and a more simplified stand structure when compared to untreated late-seral habitats. However, important habitat components would be protected, including large trees, down logs and snags (USDA Forest Service 2001 and 2004, Stephans et al. 2005). Most trees that would be removed are less than 24 inches dbh, with a few scattered individual trees removed up to 30 inches dbh. Table 4 summarizes effects to spotted owls and their habitat within commercial thinning units.

Table 4. Pre- and Post Project Effects to Spotted Owl Habitat (4M, 4D, 5M, 5D) in Commercial Harvest Units

Key Habitat Factors	Current condition	Post-project condition	Change in Habitat
Moderate and High Capability Habitat (Acres)	2,691 acres of moderate capability habitat 247 acres of high capability habitat	2,691 acres of high capability habitat 247 acres of moderate capability habitat	No CWHR 4M, 4D, 5M or 5D acres in units will change to a different CWHR classification. Canopy cover reduction in commercially harvested stands will move from an average of 71% (ranging from 60% to 80%) to 58% (ranging from 50% to 65%) immediately after treatment (refer to Appendix A). Although treatments will reduce habitat quality, the estimated post-treatment CWHR classification (Appendix A) of commercial harvest stands treated will be within the range of what is considered suitable spotted owl habitat (moderate capability).
Protected Activity Centers/Nest Stands (acres)	N/A-No PACs are being entered for commercial harvest. Conditions will remain stable. No disturbance to known historical activity centers.	N/A-No PAC acres are being entered for commercial harvest. Conditions will remain stable. No disturbance to known historical activity centers.	Stable. No PACs are being entered for commercial harvest.
HRCAs	HRCAs are being entered for commercial treatment as described in Table V.4.	Canopy closure and tree density will be reduced as displayed in Table V.4. Brush will also be removed as described under the Proposed Action description.	Prey habitat in the HRCAs will be impacted through removal of habitat components including small diameter tree removal, brush removal, and snags under 15" dbh removal. Larger diameter tree removal and resultant canopy reduction will reduce areas from high suitability habitat to moderate suitability habitat potentially limiting nesting conditions for owls should they need to relocate their activity center. Four (ED 028, 091, 121, 199) of the seven PACs will be over the 20% threshold for disturbance. One will be at 20% (ED137) and two will be below 10%. (ED122 and 317). Mitigations following the Framework guidelines will aid in retaining minimum canopy cover and large trees; however, the quality of the HRCAs as foraging habitat may be further impacted by loss of remaining as well as "retention" habitat components through prescribed burning. Careful design of prescriptions, timeframe, and locations of burning will be needed to avoid altering HRCAs to below conditions typically considered as high quality owl foraging habitat.

Alternative 1 utilizes harvest prescriptions consistent with the SNFPA guidelines designed for spotted owls, and recommendations of the GTR-220. This alternative, by potentially reducing wildfire through

thinning and fuels treatments, may make habitat more sustainable over time. Alternative 1 is likely to maintain future management options for the California spotted owl based on implementation of the broader scale conservation strategy provided by the SNFPA guidelines. Since treatments alter vegetation potentially providing suitable foraging habitat for spotted owls, *Alternative 1 may affect individuals, but is not likely to lead to a trend towards federal listing or loss of viability for the California spotted owl.*

Cumulative Effects. Within the cumulative effects analysis area, approximately 18,840 acres were determined to be suitable habitat for sensitive species dependent on late seral conifer forest habitat types using the 2005 Forest Vegetation Inventory. The habitat is distributed throughout the cumulative effects analysis area. There have been forest health or fuels reduction projects that included actions such as understory thinning, mastication, and/or prescribed burning within the Raintree Project cumulative effects analysis area since 2005. Projects that have occurred within the cumulative effects analysis that occurred in suitable spotted owl habitat were fuels reduction and forest health projects that used commercial thinning prescriptions. These activities would be considered a moderate versus high degree of habitat alteration (high as in removal of habitat) as prescriptions maintained at least marginal canopy cover and tree size characteristics for spotted owls. Following the initial treatment, the stands were in various conditions/stages, and post-harvest large trees were maintained with a minimum 40 to 50 percent canopy cover retention. These projects, which have occurred within the last 5-6 years, resulted in reductions in canopy cover and decreased structural diversity.

Actions in the analysis area prior to 2005 include timber harvest (including clearcuts and salvage harvest), reforestation, pre-commercial thinning in plantations, roadside hazard tree removal, special use permits, recreation use, and wildland fire. Of these, regeneration timber harvest, clearcutting or historic fire salvage has had the greatest impact on late seral forest habitat within the cumulative effects analysis area. This practice has resulted in habitat fragmentation (seen as part of the CWHR 1X, 2X, 3X, 4X typing in the 2005 vegetation layer) on approximately 4,717 acres on National Forest lands. Harvest on private lands is designed for timber production and may not retain those attributes believed to be important to sensitive species. The practice of regeneration harvests on National Forest lands was mostly discontinued in the early 1990s. Plantations resulting from regeneration harvest are in various stages of recovery with conifers ranging from saplings to trees greater than 20 inches dbh. Although plantations in general do not provide quality habitat for old forest species, many of the older plantations are likely to provide suitable foraging habitat for sensitive wildlife species such as the spotted owl. Table 5 summarizes the approximate acres of habitat affected by vegetation treatments in the past (since 2005), present, and foreseeable future on National Forest lands within the cumulative effects analysis area.

Table 5. Acres of Suitable Spotted Owl Habitat Affected by Past (since 2005), Present and Foreseeable Actions Cumulative Effects Analysis Area

Suitable habitat (CWHR Type 4M, 4D, 5M, 5D)	Foreseeable Future Actions	Acres of Habitat Altered through Forest Health Vegetation Treatments on NF lands (2005-2010)	Acres of Habitat Affected by Commercial Harvest Units in the Proposed Action	Percent of habitat affected by Commercial Harvest Units	Percent of habitat within analysis area affected in combination with proposed treatments
18,840 total acres (98%) 18,446 acres NF (67% of NF lands) 394 acres private (2% of private lands)	No foreseeable actions are anticipated to be implemented within the next 5 years.	36 acres from the Owl Canopy Study Project effected habitat quality in regards to the owls utilizing the Raintree Project area since 2005 through commercial thinning.	2,938 acres	16% of total suitable acres	2,974 acres on NF lands 16% of total suitable acres 16% of total suitable acres on NF lands

Northern Goshawk.

Direct and Indirect Effects. Alternative 1 maintains habitat characteristics believed to be important to the goshawk. The use of SNFPA guideline prescriptions would retain the components of goshawk habitat thought to be important (large diameter trees, snags, logs, and moderate to high canopy closure) while improving stand health and making the treated stands more resilient to the effects of fire. Stand structural components would be altered from project activities, potentially affecting goshawk foraging behavior. Foraging opportunities (provided prey habitat was maintained) for goshawk, would be enhanced in these areas by opening up the understory, enabling higher maneuverability through the stand. Table 6 summarizes the effects to goshawks and their habitat within commercial thinning units. *Alternative 1 may affect individuals, but is not likely to lead to a trend towards federal listing or loss of viability for the northern goshawk.*

Table 6. Pre- and Post Project Effects to Goshawk Habitat Acres (4M, 4D, 5M, 5D) in Commercial Harvest Units in Natural Stands

Key Habitat Factors	Current condition	Post-project condition	Change in Habitat
Moderate and High Capability Habitat (Acres)	2,691 acres of moderate capability habitat 247 acres of high capability habitat	2,691 acres of high capability habitat 247 acres of moderate capability habitat	No CWHR 4M, 4D, 5M or 5D acres in units will change to a different CWHR classification. Canopy cover reduction in commercially harvested stands will move from an average of 71% (ranging from 60% to 80%) to 58% (ranging from 50% to 65%) immediately after treatment (refer to Appendix A). Although treatments will reduce habitat quality, the estimated post-treatment CWHR classification (Appendix A) of commercial harvest stands treated will be within the range of what is considered suitable goshawk habitat (moderate capability).
Protected Activity Centers/Nest Stands (acres)	N/A-No PACs are being entered by commercial harvest. Conditions will remain stable. LOPS will aid in preventing disturbance to nesting goshawks (G29-06).	N/A-No PAC acres are being entered. Conditions will remain stable. LOPS will aid in preventing disturbance to nesting goshawks (G29-06).	Stable. No PACs are being entered.

Cumulative Effects. Thinning prescriptions would not increase landscape level fragmentation based upon the canopy closures retained and would reduce future potential cumulative effects to the extent that the potential of a future large wildfire is reduced. As goshawks utilize similar habitat as that of spotted owls, cumulative effects would be similar to that described for the California spotted owl.

Past timber management may have lessened habitat quality by reducing canopy closure and removing larger size class trees that goshawk tend to prefer for nesting. "There is a concern that northern goshawk populations and reproduction may be declining in North America and California due to changes in the amount and distribution of habitat or reductions in habitat quality (Bloom et al. 1986, Reynolds et al. 1992, Kennedy 1997, Squires and Reynolds 1997, Smallwood 1998, DeStefano 1998 In USDA Forest Service 2001). However, the U.S. Fish and Wildlife Service completed a formal review of the species and determined that the goshawk is currently well distributed throughout its historic range and that there is "no evidence that the goshawk population is declining in the western United States, that habitat is limiting the overall population, that there are any significant areas of extirpation, or that a significant curtailment of the species' habitat or range is occurring" (Federal Register 1998).

Cumulative effects to goshawk habitat (4M, 4D, 5M, and 5D) would be the same as described for the spotted owl in Table V.7. It is estimated that within 20 years, areas treated on National Forest system

lands are expected to recover higher canopy closures and tree size and therefore have an increase in habitat quality (USDA Forest Service 2001 and 2004). The proposed project will not impact goshawk nest stands from commercial harvest, and will maintain suitable habitat for goshawk foraging following treatments by retaining large trees and 40% canopy cover where it currently meets or exceeds it.

American Marten, Pacific Fisher, and Sierra Nevada Red Fox.

Direct and Indirect Effects. Alternative 1 would not remove habitat identified as critical for maintaining habitat options for the American marten, Pacific fisher or Sierra Nevada red fox. Since surveys have not been completed, there is low risk of disturbance to individuals and unknown denning sites, especially for the Pacific fisher, as the species is believed to be extirpated from the Forest. Prescriptions in Alternative 1 are designed to retain and improve the current and future number of large diameter trees, snags, and down logs, that would maintain and provide habitat for future recovery options. Therefore, *Alternative 1 may affect individuals, but is not likely to lead to a trend toward federal listing or loss of viability for the American marten, Pacific fisher or the Sierra Nevada red fox.*

Cumulative Effects. The project would not substantially contribute to adverse cumulative effects on the American marten, Pacific fisher, and Sierra Nevada red fox in combination with any past, present, or reasonably foreseeable future projects. Considering new information on the forest-wide availability and distribution of habitat, the project would not remove habitat that appears to be critical for maintaining distribution of habitat for these species. Thinning prescriptions would not increase landscape level fragmentation based upon the canopy closures retained and would reduce future potential cumulative effects to the extent that the area of future large wildfires is reduced. Other cumulative effects are similar to those described for the California spotted owl. In addition, the development of sustainable habitat with a larger hardwood component in Alternative 1 could better improve habitats for recovery efforts in the future for the Pacific fisher in regards to California black oak.

Pallid bat, Townsend's Big-Eared Bat, and Western Red Bat.

Direct and Indirect Effects. In the absence of surveys of pallid bat, Townsend's big-eared bat, and western red bat, it is assumed that individual roost sites may occur in large hardwoods and large snags scattered throughout the project area. Timber harvest and smoke from prescribed burning may result in disturbance or temporary displacement of bats using these resources. As large hardwoods and large snags are not targeted for removal, this short term potential effect is offset by the long term benefit of reducing the risk of stand replacing wildfire and enhancing stand conditions favoring the development and retention of large hardwoods. Protection and enhancement of riparian areas would also aid in protecting and enhancing western red bat habitat. *Alternative 1 may affect individuals, but is not likely to lead to a trend towards federal listing or loss of viability for the pallid bat, Townsend's big-eared bat and western red bat.*

- Cumulative Effects. Given the changes in forest vegetation that have been described within the Sierra Nevada over the last 100 years, it is likely that there are less mature hardwoods and denser conifer vegetative conditions between 0 and 8 feet high within mid-elevation stands than there were historically. This would suggest a historic reduction in foraging habitat availability and quality. It is unclear what the cumulative effect of past actions may have been on sensitive bat species in the Raintree Project analysis area. Timber harvest may have removed existing and future snags that could have been utilized by bats for roosting, and may have also opened the understory up for foraging opportunities as well as reducing the risk of habitat loss from wildfire. Clearcuts may have benefited bats as they are found foraging more often in edges and open stands.

This and other projects in the area with the primary prescription of understory thinning and prescribed burning would likely improve habitat across the landscape for bats by improving foraging opportunities, provided prey habitat (shrubs, etc) is retained. The reduction in risk of future wildfires, promotion of future hardwood habitat, and maintaining open understory over the long term meets several of the conservation measures suggested for bats in the SNFPA.

American Bald Eagle.

Direct and Indirect Effects. Alternative 1 maintains habitat characteristics believed to be important to the bald eagle. The use of SNFPA guidelines would retain large trees, moderate to high canopy closure, and large snags while improving fire resiliency across the project area. Thinning is expected to improve foraging habitat conditions by opening the overstocked stands sufficiently to allow flight through the stands. Even though no nests are in or within 10 miles of the project area, *Alternative 1 may affect individuals, but is not likely to lead to a trend towards federal listing or loss of viability for the American bald eagle.*

Cumulative Effects. The project would not substantially contribute to adverse cumulative effects on bald eagle in combination with any past, present, or reasonably foreseeable future projects. Thinning prescriptions would not increase landscape level fragmentation based upon the canopy closures retained and would reduce future potential cumulative effects to the extent that the potential of a future large wildfire is reduced. Other cumulative effects are similar to those described for the spotted owl.

Great Grey Owl.

Direct and Indirect Effects. Alternative 1 maintains habitat characteristics believed to be important to the Great grey owl. The use of SNFPA guidelines would retain large trees, moderate to high canopy closure, and large snags while improving fire resiliency across the project area. Thinning is expected to improve foraging habitat conditions by opening the overstocked stands sufficiently to allow flight through the stands. Even though no nests are in the project area, *Alternative 1 may affect individuals, but is not likely to lead to a trend towards federal listing or loss of viability for the great grey owl.*

Cumulative Effects. The project would not substantially contribute to adverse cumulative effects on great gray owl in combination with any past, present, or reasonably foreseeable future projects. Thinning prescriptions would not increase landscape level fragmentation based upon the canopy closures retained and would reduce future potential cumulative effects to the extent that the potential of a future large wildfire is reduced. Other cumulative effects are similar to those described for the spotted owl.

Effects Common to All Species.

Sporax treatment for control of *Heterobasidion occidentale* root disease. The direct and indirect contamination to animals through the use of Sporax should have no acute or chronic negative effects.

Alternative 2 (No Action)

Effects Common to All Species.

Indirect and Cumulative Effects. There are no activities related to this project, therefore, there would be no direct effects to any of the species analyzed in this document or their habitat. No projects such as landing, hardwood, or riparian restoration; road closure or noxious weed removal would occur under this

project, leaving habitat conditions as they currently are in the short-term for wildlife. As no activities are proposed under the No Action Alternative, habitat would be as described under Section IV - Affected Environment (Yasuda, 2011).

The risk of increased conifer mortality from insect infestations and stand-replacing wildfires would not be reduced, and could result in future indirect effects to late seral habitat. These effects could be positive or short-term and slight, as in the case of light drought related or insect related conifer mortality increasing snags and logs, or long term and substantial in the case of stand replacing wildfire. Assuming continued fire suppression and the lack of understory prescribed burning; most forest stands in the project area would continue to develop dense stand structures due to the ingrowth of shade tolerant white fir and incense cedar. This may create habitat conditions more favorable for species, which prefer close canopied forests, such as the spotted owl, although as stand density increases, the stand becomes more susceptible to stand replacing crown fires. Within hardwood stands, conifer encroachment would continue, eventually overtopping and shading out the hardwoods.

Since there would be no activities, this alternative would not contribute toward any adverse cumulative effects related to disturbance of individuals or habitat, assuming that a stand replacing wildfire or other natural related stand degeneration does not occur.

The No Action Alternative would not directly affect the suitability of species habitat within the project area and would have no direct effect on any of the species analyzed in this document. Since fuel levels within the project areas would not be reduced under the No Action Alternative, future wildfires may be of sufficient intensity to result in habitat loss, which could result in the effective removal of habitat and reproductive potential for an extended period. Since the occurrence, extent and intensity of future wildfires cannot be accurately predicted; it is not possible to quantitatively predict the effects on species or their habitat. However, it is not likely that a wildfire in this project area, in and of itself, would lead to a trend toward federal listing or loss of viability due to the Sierra Nevada-wide distribution of any of the species analyzed in this document. *The No Action Alternative would not lead to a trend towards federal listing or a loss of viability for any of the species analyzed in this document.*

Alternative 3 (Non-Commercial)

California Spotted Owl.

Direct and Indirect Effects. Effects on spotted owl habitat from Alternative 3 would be the same as described in Alternative 1 with a slight reduction in project related impacts from retention of trees 10 inches dbh or greater. The direct and indirect effects of Alternative 3 on the spotted owl are essentially the same as described above for Alternative 1 as the same acres are proposed for commercial harvest treatment under both alternatives. Retention of these trees would retain habitat characteristics within stands that could potentially provide nesting structures for owls (reaching 30" dbh or greater). Prey habitat and structures for food caches would also be retained at a higher level than that of Alternative 1. Trees of this diameter provide habitat while living but also are of the size, as a snag or downed log, to accommodate primary and secondary cavity using prey species.

Since stand altering activities would result in simplified canopy layers, and a short-term reduction in canopy closure, *Alternative 3 may affect individuals, but is not likely to lead to a trend towards federal listing or loss of viability for the California spotted owl.*

Cumulative Effects. The cumulative effects of Alternative 3 would be less intensive than described for the spotted owl under Alternative 1, since canopy cover and structure would be altered to a lesser degree. Treatments would occur over the same area but would be less intensive, presumably reducing the magnitude of cumulative effects associated with reduced cover and canopy structure, and reducing the probability of habitat loss in future wildfires.

Northern Goshawk.

Direct and Indirect Effects. Effects on goshawk habitat from Alternative 3 would be the same as described in Alternative 1 with a slight reduction in project related impacts from retention of trees 10 inches dbh or greater. The direct and indirect effects of Alternative 3 on the northern goshawk are essentially the same as described above for Alternative 1 as the same acres are proposed for commercial harvest treatment under both alternatives. The difference between Alternative 1 and 3 in terms of direct and indirect effects on habitat are described in the effects discussion for California spotted owl as goshawk utilize similar habitat as that of the spotted owl.

Since stand altering activities would occur adjacent to goshawk PACs, resulting in simplified canopy layers, a short-term reduction in canopy closure, and activities which could result in disturbance, *Alternative 3 may affect individuals, but is not likely to lead to a trend towards federal listing or loss of viability for the species.*

Cumulative Effects. The cumulative effects of Alternative 3 would be less than described for the goshawk under Alternative 1, as canopy cover and structure would be altered to a lesser degree. Treatments would occur over the same area but would not remove larger diameter trees, presumably reducing the magnitude of cumulative effects associated with reduced cover and canopy structure, and reducing the probability of habitat loss in future wildfires.

American Marten, Pacific Fisher, and Sierra Nevada Red Fox.

Direct, Indirect and Cumulative Effects. Effects to American marten, fisher and Sierra Nevada red fox from Alternative 3 would be similar to that described for Alternative 1 with the exception of the retention of trees over 10 inches dbh. Effects to American marten, pacific fisher and Sierra Nevada red fox from Alternative 3 would be similar to that described for the spotted owl in regards to maintaining larger trees. In addition, the retention of future large diameter trees that may serve as snags or logs would have a higher level of substrates for the three species for denning, foraging and in the case of the marten, subnivean habitat.

Prescriptions in Alternative 3 are designed to retain and improve the current and future number of large diameter trees, snags, and down logs, that would maintain and provide habitat for future recovery options. Therefore, *Alternative 3 may affect individuals, but is not likely to lead to a trend toward federal listing or loss of viability for the American marten, pacific fisher or the Sierra Nevada red fox.*

Pallid bat, Townsend's Big-Eared Bat, and Western Red Bat.

Direct, Indirect, and Cumulative Effects. Effects to pallid, Townsend's and big-eared bats from Alternative 3 would be similar to that described for Alternative 1 with the exception of the retention of trees over 10 inches dbh. Effects to the bat species would be similar to that described for the fisher, marten and Sierra Nevada red fox with roosts being substituted for den habitat. A potential negative effect, though small, may be the retention of conifers that are impacting hardwoods through overtopping

and encroachment. Without knowing exact locations of marked trees near hardwoods it is difficult to predict to what extent this impact would be. Prescriptions to treat around hardwoods may lessen this impact by opening up stands enough around these hardwoods to enable light to reach them which would maintain and possibly enhance hardwoods in the stand. Under Alternative 3, a slightly less availability of roosts in the form of hardwoods may result, but would still have an increase of recruitment snags in the form of conifers.

Under Alternative 3, a slightly less availability of roosts in the form of hardwoods may result (due to competition with more conifers remaining in the stand) but would still have an increase of recruitment snags in the form of the existing conifers. *Alternative 3 may affect individual pallid, Townsend's big-eared and western red bats, but is not likely to lead to a trend towards federal listing or loss of viability.*

American Bald Eagle.

Direct, Indirect and Cumulative Effects. Effects to the bald eagle from Alternative 3 would be similar to those described for the bald eagle under Alternative 1 with the exception of the retention of trees over 10 inches dbh. Retention of these trees would retain habitat characteristics within stands that could potentially provide nesting structures (live trees) and additional roosting trees, especially communal winter roosts (live trees and snags), for bald eagles at a faster rate (reaching 30" dbh or greater) then if removed, and as would occur in Alternative 1.

Alternative 3 maintains habitat characteristics believed to be important to the bald eagle. The use of SNFPA guidelines would retain large trees, moderate to high canopy closure, and large snags and down logs, while improving fire resiliency across the project area. *Alternative 3 may affect individuals, but is not likely to lead to a trend towards federal listing or loss of viability for the species.*

Great Grey Owl.

Direct, Indirect and Cumulative Effects. Effects to the great gray owl from Alternative 3 would be similar to those described for the great gray owl under Alternative 1 with the exception of the retention of trees over 10 inches dbh. Retention of these trees would retain habitat characteristics within stands that could potentially provide nesting structures (live trees) and additional roosting trees for great gray owls at a faster rate (reaching 30" dbh or greater) then if removed, and as would occur in Alternative 1.

Though there would be some reduction in canopy closure and some simplification of stand characteristics, Alternative 3 would still maintain habitat characteristics believed to be important to the great gray owl. Prescriptions in Alternative 3 are designed to retain and improve the current and future number of large diameter trees and large snags that would maintain and provide habitat for the great gray owl. Therefore, *Alternative 3 may affect individuals, but is not likely to lead to a trend toward federal listing or loss of viability for the great gray owl.*

Effects Common to All Species.

Sporax treatment for control of *Heterobasidion occidentale* root disease. The direct and indirect contamination to animals through the use of Sporax should have no acute or chronic negative effects.

TERRESTRIAL MANAGEMENT INDICATOR SPECIES

Project-level effects on Management Indicator Species (MIS) are analyzed and disclosed as part of environmental analysis under the National Environmental Policy Act (NEPA). This involves examining the impacts of the proposed project alternatives on MIS habitat by discussing how direct, indirect, and cumulative effects would change the quantity and/or quality of habitat in the analysis area.

The following direct, indirect and cumulative effects to the management indicator species and their habitats are summarized from the Terrestrial Wildlife Management Indicator Species Report (Yasuda, 2011).

Alternative 1 (Proposed Action)

Shrubland (Fox Sparrow)

Direct and Indirect Effects. There are 122 acres of California Wildlife Habitat Relationship (CWHR) montane chaparral (MCP) within burn units within the project boundary. Project activities within commercial harvest units or prescribed burning within plantations may have indirect effects that could affect conditions for brush enhancement and/or retention both in the short and long term in regards to reaching a condition where it would be considered as CWHR MCP in the future.

In units with prescribed burning, changes to the amount of acres of shrub dominated habitat are not expected to result from the Raintree Forest Health Project. The age class and ground cover of shrubs would change from mature or decadent to seedlings or sprouts, however, and shrub cover would be reduced for two to three years as shrubs regenerate and resprout following prescribed burning. Fox sparrows prefer burned-over forest land at a stage of recovery with heavy growth of brush (Austin 1968). At sites in the Sierra Nevada, post-fire, fox sparrow densities change as brushy fields of chaparral mature (Bock and Kynch 1970, Bock et al. 1978). Approximately 10 years after a fire, montane chaparral reached a density sufficient to support the species. Based upon this information, the Raintree Forest Health Project would reduce habitat for fox sparrows for approximately 10 years following prescribed burning, in areas with complete consumption. Since the project area would not burn at the same intensity as a wildfire, it is expected that some unburned patches of shrubs would remain in the project area and would continue to support fox sparrows over this 10 year period. Additional shrub growth within openings created in forested stands is likely to increase for the species in the long term. Within the 1,687 acres of machine piling, shrub habitat could be removed through the effects of dozers pushing materials into piles; however, it is anticipated that these openings would still retain soil conditions suitable for shrub re-establishment within 1-3 years.

Cumulative Effects. Shrub habitat types would not be converted to other vegetation in terms of acres of habitat and therefore would not alter the existing trend in the amount of habitat type. Though the quality of size class and cover class shrub habitat would be altered, the acres of shrubland habitat on the 122 acres of shrubland habitat occurring in the Raintree Project area would be retained.

Oak-Associated Hardwood and Hardwood/Conifer (Mule Deer).

Direct and Indirect Effects. Fuelwood collection could potentially increase pressure on the existing oak component in the analysis area. Areas easily accessible from roads have experienced the loss of both small live and dead oak from legal woodcutters (often mistake dormant oak as dead) and the loss of large

diameter mast producing oak from illegal woodcutting activities. These activities, adversely affect mast production, an important forage item for deer. Road and trail closure/restoration; and dispersed recreation management projects would aid in controlling impacts to existing mature hardwoods and young hardwood establishment.

Treatment around oaks to reduce conifer competition (particularly shading) would enable faster growth of existing oaks, protecting and increasing mast production in the area. Openings would also enable acorn establishment and multi-aged hardwood stands, perpetuating black and canyon oak within the project area. Though these treatments occur in Sierran Mixed Conifer (SMC) types, hardwoods may establish to the extent they create Montane Hardwood-Conifer (MHC) or Montane Hardwood (MHW) pockets within these SMC stands in the long term. Similar effects can be anticipated for prescribed burning in regard to removal of small diameter conifers that may compete with young and mature oak for resources. Prescribed burning could affect oak established seedlings and saplings through consumption. Mature oaks may be able to withstand burning with the exception of areas of rot within the tree. This may result in a portion or all of the oak being consumed. Resprouting of oak, or ground cover removal for the establishment of oak seedlings, would enable hardwoods to remain and/or increase within the stands. Timing of prescribed burning to avoid impacts to acorns and their future resultant seedlings would be incorporated within burn plans associated with this project, minimizing impacts to future hardwood generations.

No MHC or MHW stands occur within any of the commercial harvest or plantation treatment units. Within the burn only units there are 4 acres of MHW habitat. Hardwoods do occur mixed in the SMC designated stands as individual trees or small groves intermixed with conifers.

Cumulative Effects. As no stands are currently typed as MHW/MHC, there will be no change in MHW/MHC stands from project treatments. Treatment around oaks in SMC stands potentially may create small pockets of MHW/MHC within the SMC stands in the long term. The Raintree Project will not alter the existing trend in oak-associated hardwood and hardwood/conifer habitat, particularly since the project will enhance hardwood diversity within stands. The cumulative effects conclusion in MIS document on page 21 clearly states no MHW/MHC habitat so no cumulative effects. So why is there such a lengthy discussion under direct and indirect if there are no effects? I am confused.

Riparian (Yellow Warbler).

Direct and Indirect Effects. There are approximately 452 RCA acres within commercial harvest units. These acres fall within the categories of ephemeral (291 acres), seasonal (85 acres) and perennial (76 acres). Riparian conservation objectives and Best Management Practices (BMPs) under the Raintree Forest Health Project would protect and/or enhance the integrity of riparian areas. Reduction in sediment delivery and additional erosion problems from dispersed recreation and vehicle travel would be reduced through road/trail restoration and dispersed recreation management projects.

There would be no change in existing deciduous tree component within the project from conifer tree removal. Aspen restoration projects would increase the number of trees, diameter of trees and age categories of deciduous trees within 1-3 years. Prescribed burning that enters areas of aspen clones may increase conditions to enable stands to increase in size, providing additional protection measures are done to protect both large trees and suckers from livestock.

Reduction in total canopy cover changes for aspen restoration would come from the removal of conifers within approximately 10 acres in the short term. It is anticipated (based on similar projects) that within 1-3 years deciduous tree canopy cover would replace or exceed that of pre-treatment canopy closure.

Coniferous trees of a variety of sizes (including those up to 29.9" dbh) would be removed through noncommercial felling and left in place or utilized for additional riparian restoration projects. These trees would have localized site specific effects over the combined 20 acres of aspen restoration project acres.

Cumulative Effects. As indirect and direct effects from the project would enhance aspen stands, reduce erosion, follow RCA objectives and BMPs, there would be no additional adverse cumulative effects associated with this project under this alternative in regards to reduction in change in acres of: deciduous canopy cover, total canopy cover or CWHR size classes. Therefore the Raintree project area would not alter the existing trend in the amount of montane riparian habitat acres, nor would it lead to a change in the distribution of yellow warbler across the Sierra Nevada bioregion.

Early and Mid-Seral Coniferous Forest (Mountain Quail).

Direct and Indirect Effects. Effects to small diameter trees would occur from the following project activities: (1) approximately 3,406 acres would potentially have small trees (4-9.9" dbh) as well as larger sizes (10-29.9" dbh) mechanically removed as needed in areas of commercial tree harvest; (2) hand cutting and piling of small trees (1-9.9" dbh) would occur on approximately 91 acres in sensitive areas (steep slopes (over 35%), RCAs, and dispersed recreation areas); and (3) prescribed understory burning would occur on approximately 5,771 acres resulting in mortality of small diameter trees within areas treated.

There are 840 acres of early seral coniferous forest habitat and 2,843 acres of mid seral coniferous forest habitat that occur within commercially treated project units. The removal of competing understory conifers through thinning would move stands into mature forest sooner, reducing the habitat capability for quail in these areas in the long term. In the short term, forage and cover in the form of dense stands of young trees would be removed, reducing both forage and cover until these components return in these stands (3-5 years) as site conditions allow. The remaining 4,344 acres of early-mid seral habitat may be potentially burned within the prescribed burn units. Both harvest and burn units would result in changes in tree size and canopy closure.

More data is necessary from the MIS to adequately describe the effects. Page 26 actually spells out the effects by treatment and provides better context to the high acreage that will be affected. I suggest adding some of that discussion to the summary in the previous paragraph. It is difficult to understand how the cumulative effects paragraph can conclude the proposed activities would not alter the existing trend.

Cumulative Effects. The change in canopy closure and short-term reduction of understory shrub and tree cover in commercial harvest units on 3,077 acres and 4,344 in prescribed burn areas, out of 8,027 acres of habitat in the cumulative effects analysis area, would not alter the existing trend in the habitat, nor would it lead to a change in the distribution of mountain quail across the Sierra Nevada bioregion.

Late Seral Open Canopy Coniferous Forest (Sooty Grouse)

Direct and Indirect Effects. Approximately 24 acres of 5P and 2 acres of 5S stands occur scattered within the units based on field work compared to a GIS run of 10 acres of 5P. There is no anticipated change in number of acres in 5P or 5S post harvest in the commercial units. Based on the low acreage in the project

area and the units, it is not expected that there would be a change in acres of late seral closed canopy coniferous forest from prescribed fire. A substantial increase in canopy from the burning would not occur therefore canopy conditions would remain suitable for sooty grouse in the area.

Cumulative Effects. As there are no direct or indirect changes in existing circumstances due to the small acreage of habitat in the project area; there will be no cumulative effects associated with this project under this alternative in regards to change in acres of late seral open canopy coniferous forest; tree canopy closure; or understory shrub canopy closure class associated with late seral open canopy coniferous forest.

Late Seral Closed Canopy Coniferous Forest (California Spotted Owl, American Marten, and Northern Flying Squirrel).

Direct and Indirect Effects. For all three species, closure and rehabilitation of roads and trails, and dispersed recreation management is anticipated to enhance habitat by enabling these linear features to become naturalized with vegetation. Over time the growth of vegetation may reduce any fragmentation of habitat caused by these travel systems. Approximately 247 acres of 5M/5D stands occur scattered within units having areas with proposed commercial harvest or treatments. The remainder of the 5M/5D habitat (660 acres) would potentially be burned as part of the prescribed burned units. This habitat primarily overlaps goshawk PACs, and spotted owl PACs and HRCAs.

No 5D/5M stands acres will be altered to a different CWHR size or density type (Appendix A) within commercial harvest units under the project; therefore; no change in acres of late seral closed canopy coniferous forest is expected for the California spotted owl, marten or northern flying squirrel.

Though there will be no change in 5D/5M stands acres pre- and post commercial harvest treatment, units will be thinned under the project; resulting in a reduction in canopy closure for the California spotted owl, marten and northern flying squirrel (Appendix A) within those units. The majority of the units will retain 60% canopy closure; however one unit will drop to 40% which will still retain habitat suitability for the three species unless prescribed fire drops it to below 40%. This would be an immediate short-term effect until tree growth enables canopy cover to meet or exceed 40% in the long term (10 plus years).

Cumulative Effects. Within the project boundary, there is 907 acres of late seral closed canopy coniferous habitat. The retention of 907 acres of late seral closed canopy coniferous forest habitat within the project area will retain this habitat and not add to any loss of acres of this habitat type within the cumulative effects analysis area. A reduction of canopy closure within this habitat will occur in the short term within commercial harvest units but will not be reduced to the extent the habitat is altered to below foraging habitat for the spotted owl, suitable habitat capability for the marten, or suitable habitat capability for the northern flying squirrel.

There have been no projects in the project area since 2005 that have affected late seral open canopy forest. Past projects utilizing CASPO and Sierra Nevada Framework guidelines retained at least 40% canopy cover and trees over 30" dbh through understory thinning prescriptions. Earlier timber and post-fire salvage harvest on National Forest that resulted in the creation of plantations within the project area removed late seral habitat. In areas of commercial treatments, it can be expected that in the short-term there will be no significant changes but in the long term, treatments to move stands to late seral conditions will increase habitat for the spotted owl, American marten and northern flying squirrel. Prescribed burning will change existing snag and down log component by altering the existing age and size classes currently within the area. It can be expected that losses of late decay stages will occur reducing this age class in the area. It is also expected that there will be creation of new age classes from the death of green

trees that become snags and serve as recruitment logs. The project would not alter the existing trend in the amount of habitat acres, nor would it lead to a change in the distribution of California spotted owl, northern flying squirrel or American marten across the Sierra Nevada bioregion.

Snags in Green Forest Ecosystem Component (Hairy Woodpecker).

Direct and Indirect Effects. Based on stand surveys and the Raintree Silvicultural Report (USDA 2011a) there are approximately 2-3 snags per acre having an average diameter of 16 inches and a height of about 60 feet within commercial harvest treatment units. Snags range in size from 16-50 inches dbh with heights ranging from about 50 feet to 180 feet. They are mostly white fir with smaller percentages being made up of sugar pine and ponderosa pine snags in various stages of decay.

Within the commercial harvest units there are 3,098 acres with 91% (2,824 acres) within medium and 9% (274 acres) within large snag size categories. Trees up to 29.9" dbh would be harvested (unless in HRCAs where it would be up to 19.9" dbh where there is no overlap with SPLATS) but not 30" dbh or larger; retaining the majority of the larger trees within the unit. Prescribed burning could occur in up to 3,623 acres that contain stands that could provide medium to large snag size habitat, within burn units.

Though snags are not targeted for removal under unit prescriptions, they may be removed as hazard trees along roads, campgrounds and in situations where worker safety is compromised as required by the Highway Safety Act and OSHA regulations which would reduce the amount of snags within the project area. Snag removal will remove existing and potential nesting habitat. Smaller diameter snag removal (less than 15" dbh) would remove foraging substrate. Prescribed burning may alter the existing snag cycle in the area by reducing the number of older decay classes and increasing the number of "new" snags. These effects will occur from the following project activities: (1) Hazard tree removal adjacent to road systems, landings and dispersed camping areas and within treatment areas for public and woods worker safety; (2) Snags less than 15 inches dbh would be cut and removed in commercial harvest units. (3) Prescribed understory burning would occur on up to approximately 5,771 acres with the likelihood of consuming existing older decay class snags and recruiting new snags through green tree mortality.

Cumulative Effects. Project activity that occurs on the 3,094 acres in commercial units as well as acres in burn only units that support the "snags in green forest ecosystem component" within the Raintree Forest Health project will maintain existing snag levels (except hazard trees), retain trees over 30" dbh, retain high levels of retention live green trees, and potentially increase snag levels during prescribed burning in snag deficit areas therefore, the Rain Tree Project will not add to any additional adverse effects to this habitat type (snags within green forests) within the cumulative effects analysis area.

Alternative 2 (No Action)

Shrubland (Fox Sparrow)

Indirect Effects. This alternative would not result in any direct or indirect effects to shrubland habitats.

Cumulative Effects. There would be no changes in habitat from current conditions under the No Action Alternative.

Oak-Associated Hardwood and Hardwood/Conifer (Mule Deer).

Indirect Effects. This alternative would not result in any indirect effects to oak-associated hardwood or hardwood/conifer habitats.

Cumulative Effects. There would be no changes in habitat from current conditions, under the No Action Alternative.

Riparian (Yellow Warbler).

Indirect Effects. This alternative would not result in any direct or indirect effects to montane riparian habitat.

Cumulative Effects. As there are no changes in montane riparian habitat from current conditions, the No Action Alternative would not affect the existing trend in habitat, nor would it lead to a change in the distribution of yellow warbler across the Sierra Nevada bioregion.

Early and Mid-Seral Coniferous Forest (Mountain Quail).

Indirect Effects. This alternative would not result in any direct or indirect effects to early or mid seral coniferous habitat.

Cumulative Effects. As there are no changes in habitat from current conditions, the No Action Alternative would not affect the existing early or mid seral coniferous habitat, nor would it lead to a change in the distribution of mountain quail across the Sierra Nevada bioregion.

Late Seral Open Canopy Coniferous Forest (Sooty Grouse).

Indirect Effects. This alternative would not result in any direct or indirect effects to late seral open canopy coniferous forest habitat.

Cumulative Effects. As there are no changes in habitat from current conditions, Alternative 2 would not affect the existing late seral open coniferous forest habitat, nor would it lead to a change in the distribution of Sooty Grouse across the Sierra Nevada bioregion.

Late Seral Closed Canopy Coniferous Forest (California Spotted Owl, American Marten, and Northern Flying Squirrel).

Indirect Effects. This alternative would not result in any direct or indirect effects to late seral closed canopy coniferous forest habitat.

Cumulative Effects. As there are no changes in habitat from current conditions, the No Action Alternative would not affect the existing habitat or population trend for the California spotted owl, American marten or northern flying squirrel.

Snags in Green Forests (Hairy Woodpecker).

Indirect Effects. This alternative would not result in any direct or indirect effects to acres of medium or large snag.

Cumulative Effects. As there are no changes in habitat from current conditions, the No Action Alternative would not alter the existing trend in the habitat (snags in green forest), nor would it lead to change in the distribution of hairy woodpecker across the Sierra Nevada bioregion.

Alternative 3 (Non-Commercial)

Shrubland (Fox Sparrow)

Direct, Indirect and Cumulative Effects. Effects on fox sparrow habitat under Alternative 3 would be the same as described in Alternative 1 as the difference between the two alternatives is the retention of 10 inches dbh and greater trees which does not change the acreage or quality of shrub habitat affected between the two alternatives.

Shrub habitat types would not be converted to other vegetation in terms of acres of habitat and therefore would not alter the existing trend in the amount of habitat type.

Oak-Associated Hardwood and Hardwood/Conifer (Mule Deer).

Direct, Indirect and Cumulative Effects. Effects on mule deer habitat under Alternative 3 would be the same as described in Alternative 1 with the exception of the retention of 10 inches dbh and greater conifer trees under Alternative 3. A potential negative effect, from retaining conifers over 10 inches dbh under Alternative 3, though small, may be the retention of conifers that are impacting hardwoods (oaks) through overtopping and encroachment. Without knowing exact locations of marked trees near hardwoods it is difficult to predict to what extent this impact would be. Prescriptions to treat around other hardwoods may lessen this impact by opening up stands enough around these oaks to enable light to reach them which would maintain and possibly enhance these hardwoods in the stand.

There would be no change in MHW/MHC stands from harvest.

Riparian (Yellow Warbler).

Direct, Indirect and Cumulative Effects. Effects on yellow warbler habitat under Alternative 3 would be the same as described in Alternative 1 as the difference between the two alternatives is the retention of 10 inches dbh and greater trees which does not change the acreage or quality of montane riparian habitat affected between the two Alternatives.

As indirect and direct effects from the project would enhance aspen stands, reduce erosion, follow RCA objectives and BMPs, there would be no additional adverse cumulative effects associated with this project under this alternative in regards to reduction in change in acres of: deciduous canopy cover, total canopy cover or CWHR size classes.

Early and Mid-Seral Coniferous Forest (Mountain Quail).

Direct, Indirect and Cumulative Effects. Effects on mountain quail early seral coniferous habitat under Alternative 3 would be the same as described in Alternative 1 as the difference between the two alternatives is the retention of trees greater than 10 inches dbh which does not change the acreage or quality of early seral coniferous habitat affected between the two alternatives. For mid-seral coniferous habitat the only change would be habitat retained through the retention of coniferous trees that are within the range of 10.1" - 23.9" dbh under Alternative 3. Trees 1"-9.9" dbh would have similar affects as

mentioned under Alternative 1. The change in canopy closure and short-term reduction of understory shrub and tree cover in commercial harvest units on 3,077 acres and 4,344 in burn areas out of 8,027 acres of habitat in the cumulative effects analysis area, would not alter the existing trend in the habitat, nor would it lead to a change in the distribution of mountain quail across the Sierra Nevada bioregion.

Late Seral Open Canopy Coniferous Forest (Sooty Grouse).

Direct, Indirect and Cumulative Effects. Effects on sooty grouse open canopy late seral coniferous habitat under Alternative 3 would be the same as described in Alternative 1 in terms of the majority of project treatments. The exception would be the retention of trees greater than 10 inches dbh under Alternative 3. Trees of this diameter would reach a size (30" or larger dbh) faster than under Alternative 1 (trees removed up to 29.9" dbh) to provide roosting habitat for the sooty grouse. As there would be no additional adverse cumulative effects associated with this project under this alternative in regards to reduction in change in acres of late seral open canopy coniferous forest, the Rain Tree Project area would not alter the existing trend in the amount of habitat acres, nor would it lead to a change in the distribution of sooty grouse across the Sierra Nevada bioregion.

Late Seral Closed Canopy Coniferous Forest (California Spotted Owl, American Marten, and Northern Flying Squirrel).

Direct, Indirect and Cumulative Effects. Effects on California spotted owl, American marten and northern flying squirrel closed canopy late seral coniferous habitat under Alternative 3 would be the same as described in Alternative 1 in terms of the majority of project treatments. The exception would be the retention of trees greater than 10 inches dbh under Alternative 3. Trees of this size class that become snags, would provide habitat for prey species for the California spotted owl and American marten, and habitat for the northern flying squirrel. Trees of this diameter would reach a size (30" or larger dbh) faster than under Alternative 1 (trees removed up to 29.9" dbh) to provide nesting, denning, roosting and resting habitat for the American marten, California spotted owl and northern flying squirrel. These trees in turn, would serve as recruitment trees for large diameter snags and down logs at a faster rate than stands retained under Alternative One. As there would be no additional adverse cumulative effects associated with this project under this alternative in regards to reduction in change in acres of late seral closed canopy coniferous forest, the Rain Tree Project area would not alter the existing trend in the amount of habitat acres, nor would it lead to a change in the distribution of California spotted owl, northern flying squirrel or American marten across the Sierra Nevada bioregion.

Snags in Green Forests (Hairy Woodpecker).

Direct, Indirect and Cumulative Effects. Effects to hairy woodpecker habitat (snags in green forest) under Alternative 3 would be the same as described in Alternative 1 in terms of the majority of project treatments. The exception would be the retention of trees greater than 10 inches dbh under Alternative 3. Trees of this size class that become snags would provide habitat for hairy woodpecker. Trees of this diameter would reach a size (30" or larger dbh) faster than under Alternative 1 (trees removed up to 29.9" dbh). These trees in turn, would serve as recruitment trees for large diameter snags and down logs at a faster rate than stands retained under Alternative 1. Project activity that occurs on the 3,094 acres in commercial units as well as 3,623 acres in burn only units that support coniferous forest and could provide snags in green forest in the Rain Tree project would maintain snags (except hazard trees) and levels of live recruitment trees to provide for habitat within the project area. Therefore, the Rain Tree Project would not alter the existing trend in the habitat, nor would it lead to a change in the distribution of hairy woodpecker across the Sierra Nevada bioregion.

Section 2: Raintree

AQUATIC WILDLIFE SPECIES

The following direct, indirect and cumulative effects to the aquatic species are summarized from the Biological Evaluation for the Raintree Forest Health Project (Grasso, 2011).

Alternative 1 (Proposed Action) and Alternative 3 (Non-Commercial)

Direct and Indirect Effects. Riparian Conservation Area protection measures displayed in Table 3 would be in place to minimize potential adverse effects to the California red-legged frog, Foothill yellow-legged frog, Sierra Nevada yellow-legged frog, and western pond turtle. The project area does not contain any known populations of California red-legged frogs or designated "critical habitat," however, the location in the project area (NF Cosumnes Watershed) is within "Core Recovery Habitat" for this species and GIS identified one low gradient reach below 5,000 ft. and within one mile of the project boundary on the NF Cosumnes River. This habitat has been deemed unsuitable due to high flows and thus a "no effect" determination was made. For the Foothill yellow-legged frog and Sierra Nevada yellow-legged frog, Alternatives 1 and 3 may affect individuals, but is not likely to result in the trend toward Federal listing or loss of viability.

Cumulative Effects. Based on the potential cumulative effects to aquatic and aquatic-dependent species, in view of the protection measures, overall the cumulative effects from implementation of Alternative 1 or Alternative 3 to these species and their habitats would be minimal.

Alternative 2 (No Action)

Common to All Species

Direct, Indirect and Cumulative Effects. The risk of a large wildfire in the project area would be greater than under Alternatives 1 and 3, the potential effects of a large wildfire could include a short-term degradation of water quality and aquatic habitat in the project area. The severity and extent of such effects from large wildfires is highly variable and depends on many factors. Some large wildfires result in negligible effects to water quality and aquatic habitats; in other situations adverse effects to these attributes can be substantial, although not necessarily entirely detrimental. Therefore, *Alternative 2 may affect individuals, but is not likely to adversely affect the Sierra Nevada yellow-legged frog, California red-legged frog, Foothill yellow-legged frog, or western pond turtle.*

AQUATIC MANAGEMENT INDICATOR SPECIES

Project-level effects on Management Indicator Species (MIS) are analyzed and disclosed as part of environmental analysis under the National Environmental Policy Act (NEPA). This involves examining the impacts of the proposed project alternatives on MIS habitat by discussing how direct, indirect, and cumulative effects would change the quantity and/or quality of habitat in the analysis area.

The following direct, indirect and cumulative effects to the management indicator species and their habitats are summarized from the Aquatic Management Indicator Species Report (Grasso, 2011).

Alternative 1 (Proposed Action) and Alternative 3 (Non-Commercial)

Riverine and Lacustrine (Aquatic Macroinvertebrates)

Direct and Indirect Effects. A slight increase in sediment delivery to stream channels may be realized in headwater stream channels after large rainfall events. However, because of the stream buffers for vegetation removal and distance between ignition sites for burning, the potential to cause sedimentations, alter pool depth and other stream characteristics is not expected.

Cumulative Effects. Cumulatively, activities would not affect the overall habitat of aquatic macro invertebrates.

Alternative 2 (No Action)

Riverine and Lacustrine (Aquatic Macroinvertebrates)

Direct and Indirect Effects. A slight increase in sediment delivery to stream channels may be realized in headwater stream channels after large rainfall events. However, because of the stream buffers for vegetation removal and distance between ignition sites for burning, the potential to cause sedimentations, alter pool depth and other stream characteristics is not expected.

Cumulative Effects. The cumulative effects for Alternative 2 are expected to be the same as Alternatives 1 and 3, except the beneficial parts of the proposed project, the road reconstruction, road obliteration, and road closures that are planned to occur, would not happen. Any sedimentation or increase in runoff, and reduction of future large woody debris recruitment in the RCAs from this project would not occur.

CLIMATE CHANGE

The direct, indirect and cumulative effects to climate change are summarized from the Silviculture Report, Appendix H (Howard, 2011).

Alternative 1 (Proposed Action) and Alternative 3 (Non-Commercial)

The effects of Alternatives 1 and 3 are similar in treatment and will be discussed together. Both Action Alternatives use brush cutting and pre-commercial thinning to reduce fuels and would prescribed burn approximately 9,144 acres in the project area as a follow-up treatment. The Proposed Action would commercially thin conifers up to 29.9 inches dbh while Alternative 3 would pre-commercially thin conifers to 9.9 inches dbh. Direct release of CO₂ during the burning operation would contribute to increasing the atmospheric greenhouse gas concentration. However, research indicates that fuel reduction for the Raintree project would result in a lower risk of severe wildfire for the treated acres. This reduced risk has a two-fold effect on green house gas emissions or the carbon cycle: 1) There is a direct beneficial effect on climate change of decreased green house gas emissions from these acres because the risk of acres being burned by uncharacteristically severe wildfires would be reduced, and 2) There is an indirect beneficial effect by treating these acres because live stands of trees would retain higher capacity to sequester carbon dioxide compared to stands killed by uncharacteristically severe wildfires, especially if not immediately reforested.

Treatment of fuels under either action alternative would result in decreased production of smoke and associated greenhouse gas and CO₂ emissions in the event of a wildfire. Fuel reduction treatments would result in more manageable wildfires; associated smoke would be less intense and would produce lower amounts of CO₂, greenhouse gasses, and particulate emissions in shorter durations compared to the larger and more intense fires that would occur under No Action Alternative. If a wildfire event occurs after project implementation of the Proposed Action, the combination of reduced fuels and higher residual tree survival would also reduce the release of greenhouse gasses and CO₂ as well as preserve greater amounts of carbon sequestration in the surviving trees compared to the No Action alternative.² Vegetation management treatments provide the opportunity on a long-term basis to reduce the magnitude of air quality effects from wildfire, including greenhouse gasses and CO₂. Examining four of the largest wildfires in the US in 2002, for forest land that experienced catastrophic stand-replacing fire, prior thinning would have reduced CO₂ release from live tree biomass by as much as 98%.³ Mechanical equipment used for road maintenance and reconstruction, water trucks for dust abatement and trucks that transport biomass in any form would produce exhaust containing greenhouse gases, including CO₂ and NO_x. Mechanical equipment used in thinning would also produce similar greenhouse gases from engine exhaust. Because greenhouse gases mix readily into the global pool of greenhouse gases, it is not currently possible to ascertain the cumulative effects of emissions from a single project. Effects to air quality would be too small under either action alternative to be measurable by models used to predict global warming or climate changes.

Alternative 2 (No Action)

Uncontrolled wildfires could contribute relatively large amounts of greenhouse gasses, including carbon dioxide (CO₂) to the atmosphere. Wildfires present a risk for high levels of emissions and associated negative effects to air quality, in part due to the release of carbon that was sequestered in the forest biomass prior to the wildfire. Although the No Action Alternative has the greatest potential for negative effects to air quality of the three alternatives analyzed, timing of those effects are not predictable, and would not be measurable at the scale used for modeling climate change. Because there would be no prescribed burning under the No Action Alternative, there would be no direct effects from smoke in the project area under this alternative. While the risk for wildfire effects would increase, and therefore the risk for impacts to air quality from smoke, greenhouse gasses and CO₂ would also increase, an actual wildfire occurrence is not a reasonably foreseeable or predictable event. Therefore no cumulative effects are predictable under the No Action Alternative. No additional traffic would occur and no additional internal combustion exhaust would contribute greenhouse gas emissions. Overall, the No Action Alternative would result in reduced rates of growth and carbon sequestration coupled with higher mortality rates and greater release of CO₂ through the decay process.

CULTURAL RESOURCES

The direct, indirect and cumulative effects to cultural resources are summarized from the Heritage Resource Report, #R2009050360001 (Klemic, 2011).

² *A Summary of Current Trends and Probable Future Trends in Climate and Climate-Driven Processes in the Eldorado and Tahoe National Forests and the Neighboring Sierra Nevada*. 2011. Chris Mallek and Hugh Safford. 2011. 19p.

³ *Mixed-Conifer Understory Response to Climate Change, Nitrogen, and Fire*. *Global Change Biology* (2008) 14, 1543-1552. Matthew Hurteau and Malcolm North.

Alternative 1 (Proposed Action) and Alternative 3 (Non-commercial)

Alternatives 1 and 3 have the potential to affect forty-two (42) historic and prehistoric sites. Eleven (11) sites have been evaluated for the National Register of Historic Places and been determined eligible for inclusion on the National Register. The remaining thirty-one (31) sites have not been evaluated. Seven (7) are not resources at risk from project activities. Three (3) are resources at risk from all project activities proposed. Fifteen (15) sites are resources at risk from mechanical and prescribed burning activities. Eleven (11) sites are resources at risk solely from activities associated with prescribed burning. Up to fourteen (14) sites are resources at risk from activities associated with road reconstruction activities.

Design criteria have been developed to protect the known sites from potential adverse impacts of implementing the proposed action. If previously unknown sites are encountered during project activities contract provisions would protect them. By following standard procedures for protecting heritage resources there would be no effect to cultural resources from implementing the proposed action.

Alternative 2 (No Action)

There would be no impacts to cultural resources from the No Action Alternative. However, the risk of catastrophic wildland fire within the project area would not be reduced.

HYDROLOGY

The direct, indirect and cumulative effects to the hydrologic resources are summarized from the Hydrology Report (Markman, 2011).

Alternative 1 (Proposed Action)

Direct and Indirect Effects. The largest stream in the project area is the North Fork Cosumnes River, a perennial stream that flows from east to west through the project area. Within the project area, the condition of the North Fork Cosumnes River is fairly *good*. A number of streams flow directly into the North Fork Cosumnes River. Most of these streams are intermittent - surface flow in most years is from November through May or early June. Nearly all of these streams are *moderately* or *severely degraded*. This is based on field surveys in 2009.

In the short-term (less than five years), adverse effects to aquatic resources (water quality and quantity, stream condition, and aquatic habitat) in the project area and downstream of the project area are expected to be minor or negligible. This is largely the result of the protection measures in Table 3. In the long-term (greater than five years), there would likely be an improvement in water quality, stream condition, and aquatic habitat to a number of streams in the project area. This is the result of the repairs to and the closure of a number of roads that are contributing sediment to streams, as well as the addition of large woody debris (LWD) to a number of streams that are currently deficient in LWD.

As a result of the above, the Raintree Forest Health Project (RFHP) would meet all of the Riparian Conservation Objectives (RCOs) and associated Standards and Guidelines (S&Gs) in the Sierra Nevada Forest Plan Amendment, Record of Decision (SNFPAROD) of January 2004.

Cumulative Watershed Effects (CWE). The RFHP is located in portions of five HUC 7 watersheds. However, most of the RFHP is located in two watersheds: Upper North Fork Cosumnes River (7,514 acres) and North Fork Cosumnes River - Van Horn Creek (7,521 acres).

The risk of the occurrence of CWE for each HUC 7 watershed is assigned to one of the following four categories: *low, moderate, high, or very high*. The assignment of the risk of CWE is based on a quantitative evaluation of the land disturbances in the watershed using the method of equivalent roaded acres (BRA).

The risk of cumulative watershed effects (CWE) currently ranges between *low* and *moderate* in the five HUC 7 watersheds that contain the RFHP; none of the watersheds are currently at a *high* or *very high* risk of CWE. The major land disturbances that contribute to this risk are past timber harvest, roads, and recreation sites and activities. The RFHP would increase the risk of CWE to *high* in two watersheds: Upper North Fork Cosumnes River (#2256) and North Fork Cosumnes River - Van Horn Creek (#2246). The risk of CWE would not reach *very high* in any watershed.

Alternative 2 (No Action)

Direct and indirect Effects. Alternative 2 (No Action) would result in the following effects when compared to Alternatives 1 and 3: a) there would be a greater risk of adverse effects to aquatic resources as a result of a high severity wildfire, and b) long-term improvement (greater than five years) to water quality and aquatic habitat of a number of streams in the project area would likely occur at a slower rate.

Cumulative Watershed Effects (CWE). The risk of CWE would be unchanged in the five HUC 7 watersheds that contain the RFHP until at least 2017.

Alternative 3 (Non-Commercial)

Direct and Indirect Effects. Effects under Alternative 3 would be the same as described in Alternative 1.

Cumulative Watershed Effects (CWE). The risk of CWE under Alternative 3 would be the same as described in Alternative 1.

VISUAL RESOURCES

The direct, indirect and cumulative effects to visual resources are summarized from the Visual Resources Report (Jowise, 2011).

Alternative 1 (Proposed Action) and Alternative 3 (Non-Commercial)

Direct Effects. Regardless of the maximum tree size selected for commercial harvest under each of the action alternatives, the beneficial effect to the visual resource would be the same in terms of meeting the desired Visual Quality Objectives (VQO) as stated in the LRMP.

9N30 and North Fork Cosumnes River Viewsheds: Under Alternative 1, commercial harvest in units 10, 13, 17, 27, 28, 35, 45, 52, 88, 89, 90, 91 and 93 would be wholly or partially visible to travelers on 9N30. The units may be partially or not visible from the river due to the buffer of vegetation that would not be treated between the river and the road. Proposed timber harvest, mechanical treatment of slash and soil disturbance would be noticeable from 9N30 in the short term. The remaining stumps would be noticeable for the long term. Under-burning would be noticeable for a couple of seasons following the project and small pockets of burned trees may be visible for up to approximately ten years. Thinning of biomass material and 0 - 10" dbh prior to burning should minimize pockets of tree mortality. Thinning around rock outcrops, hardwoods, aspen groves and large conifers would enhance the overall scenic quality in the corridor by increasing the visual variety (variation in visible landforms, colors and textures) that would be revealed following the completion of the project. In the short term (0 - 5 years) the area would meet the LRMP desired VQO of partial retention where management activities are noticeable but do not dominate the landscape.

Many of the down logs within the dispersed recreation sites would be removed. Hazard trees would be removed. Parking areas for dispersed campsites would be reshaped and defined with barrier rock. Barrier rock would be placed along 9N30 to reduce evidence of OHV tracks. The overall appearance of the viewshed would be more intact. The outstandingly remarkable value of recreation for the potential North Fork Cosumnes Wild and Scenic river would be enhanced.

Indirect Effects. Following all planned treatments and after 2 - 5 years to allow for seasonal needle drop and establishment of regenerated ground cover, the project area should meet a VQO of retention.

Catastrophic wildfire has a long-term negative impact on the visual resource. Alternative 1 would reduce the risk and severity of catastrophic wildfire.

Alternative 2 (No Action)

Direct Effects. The landscape would appear as described above. The managed viewsheds within the project area would meet or exceed the ENFLRMP desired VQOs.

Indirect Effects. 9N30 and the North Fork of the Cosumnes River receive higher than average recreational use. The risk of wildfire in this corridor is great. Potential wildfire within this corridor would reduce the visual quality for at least 20 - 40 years until the vegetation could recover. Visual quality has already been reduced in major high recreation river canyons on the Eldorado N.F. including the South Fork American River and the Mokelumne River. Recreation is the outstandingly remarkable value for which the North Fork Cosumnes River is eligible for designation as a Wild and Scenic River. The recreational value would be diminished in the event of a wildfire.

SOIL RESOURCES

The direct, indirect and cumulative effects to soil resources are summarized from the Soils Report (Nicita, 2011).

Alternative 1 (Proposed Action) and Alternative 3 (Non-Commercial)

The differences between Alternative 1 and Alternative 3 are maximum diameter limits to be harvested. Alternative 1 has a dbh limit of 30 inches and Alternative 3 has a dbh limit of 10 inches. The effects are

common to both alternatives 1 and 3, however, the smaller the diameter limit, the greater future large woody debris recruitment would be. Soil disturbance differences would be negligible because skid trail and landing extent would be the same and machine piling traffic would be the same. Skidtrails, landings and machine-piling account for nearly the entire soil disturbance extent in a harvest unit.

Thinning in Natural Stands.

Direct and Indirect Effects. Short term soil exposure could be expected as a direct result of mechanical tree harvesting and skidding. Even though the natural stands currently have adequate to excessive litter cover, harvesting activities would result in displacement of litter cover. This displacement would be limited to skid trails, landings and limited areas within the harvest area. Localized soil detachment and transport may occur during precipitation events immediately following harvest activities. Expected seasonal needle fall and applying Best Management Practices would limit this effect to the season following harvest activities.

Surface soil structure degradation. The soil texture within the project area is generally loamy coarse sand and coarse sandy loam for the granitics and sandy loam to loam for the soils derived from volcanic deposits. In the coarse-textured soils found within the project area, soil aggregates are prone to destruction because of the paucity of clay. Although the lahar soils contain enough clay (10-18 percent clay) to maintain structure with minor soil disturbance, the granitics are prone to long term destruction of soil structure with minor disturbance. With no soil structure, the granitic soils are prone to dry-raveling. Adequate to excessive litter (both fine and coarse) is prevalent within the project area and would help mitigate soil structure degradation. If excessive fuel treatments occur on granitic soil, long-term soil damage would result leading to bare, dry-raveling soil.

Compaction of soils resulting from tree skidding to skidtrails. The soils within the project area are coarse-textured and not prone to severe compaction. Most soil compaction occurs within three to four passes of log laden equipment (Williamson and Neilson 2002, Grigal 2000). Compaction currently exists and is expected to increase on skid trails. Compaction resulting from single to double pass harvesting off skid trails is expected to be incidental and not significant. Re-use of existing skid trails and standard harvest unit layout would limit cumulative disturbance to less than 15 percent of any one unit.

Erosion resulting from thinning. With a minimum 70 percent ground cover and appropriate water bar construction, no measurable erosion would occur on either granitic or volcanic soils.

Changed herbaceous cover and diversity. On the lahar derived soils, commercial thinning of the natural stands would decrease the overstory canopy cover and shift the understory component from being nearly depauperate to having a an increase in herbaceous understory. Know nitrogen species such as bear clover and species of lupine, ceanothus, and snowbrush are expected to increase in cover. The indirect effects would include increased carbon and nitrogen mineralization which would increase the long-term productivity of the soil and improve soil tilth.

The coarse soil texture of the granitics, however, tends to create a droughty site condition when both overstory removal and litter removal occur. Within the granitic soil area, either plant communities dominated by sparse annual forbs or patches resembling sand piles develop. Without caution, the nutrient bank within the granitics would be decreased and have deleterious effects on the long-term soil fertility of the granitics (Laacke, 1996).

Landings and Skid Trails.

Direct and Indirect Effects. Skid trail systems are typically designed to occupy 15 percent of a management area however, that portion of the skid trail network that sees less than four passes generally are not compacted beyond the R5 Soil Quality Standard threshold for compaction. The existing conditions within the soil analysis area indicates legacy skid trails and landings recovering with incipient surface structure development and accumulation of litter which decreases soil erosion risk. Skidding would destroy surface structure and litter cover leaving skid trails prone to erosion. Reusing existing skid trails would not significantly increase the area that is detrimentally disturbed but would increase the disturbance intensity and set back natural recovery. Reusing old skid trails would result in increased erosion hazards immediately following skidding. There would likely be a small increase in new skid trails and landings where existing skid trails and landings do not meet the needs of current objectives. Although the extent of new skid trail use is not specified in the Proposed Action, it is likely to contribute less than a 5 percent increase in detrimental soil conditions. Adherence to forest Standards and Guidelines and BMPs would limit the extent and severity of the effects to soils of new skid trails.

Machine Piling.

Direct and Indirect Effects. Generally, not more than two passes are made with a low ground pressure tractor (5-6 psi) to pile slash, therefore soil porosity would be reduced but not to levels exceeding Forest Plan Standards and Guidelines threshold values.

On volcanic soils, up to 30 percent of the soil surface would be exposed from tractor treads and transport of slash material. The soil textures and water-holding capacity of soils derived from volcanic parent material promote strong herbaceous response. Increasing light to the soil by decreasing canopy and organic material cover would increase the herbaceous response. This would have the indirect effect of increasing nutrient mineralization mechanisms for improved long-term soil productivity.

On granitic soils, up to 30 percent of the soil surface would be exposed from tractor treads and transport of slash materials. Granitic soils textures and water-holding capacities do not favor a strong herbaceous response. Because the 30 percent soil surface exposure is averaged throughout each unit, there would be areas with greater than 30 percent soil cover. Because of the droughty characteristics of granitic soils, those areas with greater exposed soil may inhibit establishment of ground cover.

Prescribed Understory Burning.

Direct and Indirect Effects. Generally, soils with granitic parent material and coarse textured surface horizons are naturally hydrophobic. Fire-induced hydrophobicity resulting from the prescribed burn is likely to be altered in extent and severity. Hydrophobicity depends on soil type and burn intensity. Because of the mosaic nature of prescribed burns, the change in extent and severity of hydrophobicity cannot be predicted but is expected to slightly increase.

Throughout much of the project area, the hillslope length terminates at a road. Any increased sedimentation and surface flow would be intercepted by the road prism and concentrated to an outlet point determined by culverts, water bars, or road outsliping. This concentrated flow would have an increased sediment source for drainages that provide the terminus of flow.

With planned minimum soil cover of 70%, soil Erosion Hazard Rating is expected to be "moderate" on maximum operating slopes of 35%.

Forest soils generally have low fertility primarily due to nutrient sequestration in forest litter and decomposed woody debris. Whereas during a high intensity fire, fuel loads greater than 20 tons/acre increase the atmospheric release of soil nutrients through volatilization, low-intensity burning can rapidly release minerals to the soil and increases the potential of soil flora and fauna to mineralize sequestered nutrients. Mineralization is the process where nutrients in the soil are made plant-available. Low intensity fire on both soil types would stimulate release of grasses, forbs and shrubs that enhance soil fertility.

Plantation Treatments.

Direct and Indirect Effects. Because plantations are deficient in ground cover, cutting brush with ground placement would increase ground cover and decrease erosion and sedimentation rates. Because the effects of fire behavior on the ground cover following prescribed burn would not be known, the change in erosion would not be known. Soil cover of 70 percent would be retained in the plantations with highest risk.

Aspen Enhancement.

Direct and Indirect Effects. Regardless of tree removal methods, the surface organic layers would be displaced and no less than 20 percent mineral soils would be exposed. The aspen enhancement stands have little slope so measurable sedimentation would not be expected. Canopy reduction would decrease light interception and, consequently, increase solar radiation (light and heat) on the soil surface. Increases in soil temperature and photosynthetic potential of the aspen stands would increase herbaceous biomass and biodiversity, thereby potentially mitigating soil compaction and increasing nutrient cycling potential.

Tractor Fire Line Construction.

Direct and Indirect Effects. Soil displacement could occur on not more than 15 percent of the tractor lines. A soil is considered displaced when the surface organic material and the humic rich A-horizon is displaced. The soil would be compressed from line construction. One tractor pass would be expected with no impairment of infiltration or exceed the R5 Soil Quality Standard threshold values for soil bulk density increase.

Cumulative Effects for Alternatives 1 and 3. Existing disturbance is primarily associated with historical skidding operations. The soils supporting the natural stands are less than 15 percent detrimentally disturbed. All but three units conform to Forest Plan Standards and Guidelines for soil disturbance. Primary skid trails and landings reflect existing detrimental soil disturbance whereas disturbance that resulted from single-pass hauling is no longer evident. Although the productivity and hydrologic function of skid trails and landings are impaired, they are revealed to be recovering with time as evidenced by platy structure converting to blocky structure. Root penetration within old skid trails are also observed to be greater than what was likely when skid trails were first constructed.

The effect of re-using the skid trails would reverse the natural recovery and although the extent of detrimental disturbance would exceed Forest Plan standards, disturbance would nonetheless increase. Existing landings account for the greatest long-term disturbance. Because existing landings would be re-used and new landings would occupy a small percentage of units, the extent of disturbance would not substantially increase and likely not push units over threshold values of disturbance.

Alternative 2 (No Action)

Indirect and Cumulative Effects. There are no treatments or activities planned in the No Action alternative that would directly affect soils within the project area.

Because skidding and piling would not occur within the analysis area, additional compaction and displacement would not occur. During disturbance surveys, conversion from platy to blocky structure was evident in all stands sampled indicating that detrimentally compacted soil is trending towards improved productivity and hydrologic function. Without further mechanical incursions into the units, this continued natural recovery would continue.

With continued fire suppression, canopy cover and fuel load would continue to increase and vegetative diversity would continue to decrease. As fuel load and fire conditions overwhelm the ability of fire control efforts to suppress wildland fire, it becomes increasingly likely that a catastrophic high-severity fire would occur within the project area. Without fuels treatments, the amount of fuel build-up would continue to increase. Following high-intensity wildland fire, severe nitrogen loss occurs when total fuel loads exceed 20 tons/acre (Brown et. al. 2003); therefore, soil burning is expected as a result of high intensity fires. As fuel loads continue to increase the potential for soil burning increases.

Without treatments planned in the Action Alternatives, canopy cover would continue to increase and canopies continue to close. Closed canopy stands within the analysis would likely reduce the understory vegetative diversity (Wayman 2006) and not support healthy understory communities. Soil nutrient cycling by microflora and fauna may, therefore, be suppressed.

SENSITIVE PLANTS AND NOXIOUS WEEDS

This analysis addresses management activities and actions included in the proposed Raintree project. The cumulative effects for botany are bound in time by the first botany records on the Eldorado National forest (early 1980's) and covers all proposed actions and unplanned disturbances (such as wildfire) that are likely to occur within the next 10 years. The direct, indirect and cumulative effects to sensitive plants and noxious weeds are summarized from the biological assessment and evaluation for botanical species (Brown, 2011).

Alternative 1 (Proposed Action)

Direct effects. Negative, direct effects of the proposed project are not expected for TESP plants since design criteria have been included to prevent direct disturbance to known populations. The veined aquatic lichen near Capps Crossing and the unnamed tributary (NS-10) to the North Fork of the Consumnes River Creek are not expected to be disturbed during project activities. Pleasant Valley Mariposa lily occurrences (occ) south of the Raintree project area (occ # 53, 96, 63, and 92) would also be flagged for avoidance. If any additional Sensitive plant occurrences are discovered during the proposed project they would be protected by flag and avoidance.

Even though surveys of potential habitat for BNF Sensitive species have occurred within the project area, it is always possible to overlook Sensitive or Special Interest plants (surveys only positively state a species presence, not its absence). If surveys inadvertently overlook sensitive plants, these individuals may be affected directly by trampling from vehicles and project personnel, uprooting plants during project

activities such as fire lines creation, and exposure to lethal temperatures during prescribed fires. Undiscovered occurrences of Pleasant Valley mariposa lily, Hutchison's Lewisia, and three-bracted onion could be impacted from landing construction during timber harvest because they occur in naturally open areas. Road maintenance activities could impact undiscovered *Bruchia bolanderi* occurrences which can occur along roadside ditches. Direct impacts to undiscovered Blandow's bog moss and moonwort species are not expected because of project BMP's and protection measures for special aquatic features would exclude mechanical disturbance and active ignition from potential habitat.

Potential affects to undiscovered orchids are relatively remote since the orchid has not been found on the forest after twelve years of surveys. Raintree botanical surveys did find some potential habitat in the project area but mountain lady's slipper orchids were never found. Any undiscovered mountain lady's slipper orchid would be susceptible to direct impact from heavy equipment during commercial and pre-commercial thinning activities. Burning in the Raintree project area could also affect any undiscovered orchids since potential habitat occurs throughout much of the project area. Depending on the intensity, spring burns, when much of the plants' resources are devoted to the development of above-ground leaves, stems, and flowers, would likely result in a greater impact to the orchid. Fall burns are less likely to directly impact the orchid.

Indirect Effects. *Veined Aquatic Lichen (Peltigera hydrothria)*: Veined aquatic lichen tends to occur in clear, cool, perennial streams, with minimal scour. Any alteration of the above conditions due to project related activities is expected to negatively affect habitat quality for the Sensitive species. Specifically, it is expected that an increase in sediment delivery, stream scour during peak flows, or increased light intensity due to removal of riparian vegetation or forest canopy within 100 feet of occupied streams would impact the aquatic lichen. Within the proposed project area veined aquatic lichen grows in two perennial streams attached to bedrock and large boulders in the stream channel. The planned commercial and precommercial thinning, and prescribed fire along both of these streams has been designed to limit sediment delivery and protect or enhance conditions of streams (BMP's for aquatic features, Raintree equipment exclusion buffers, etc) so long-term effects are not expected.

Stream NS10 has been identified as deficient in large woody debris (LWD). The Raintree FHP proposes to increase LWD in deficient channels by dropping trees into the channel to increase stream bank stability and reduce sediment delivery. These restoration actions would likely benefit veined aquatic lichen in NS10 by increasing habitat quality throughout the stream. However, the lichen is currently restricted to a small section of the stream and could be extirpated if LWD is placed on the inhabited portion of NS10. To limit potential indirect impacts to aquatic lichen in NS10 LWD would not be placed within 100 feet of existing lichen to avoid pooling or altered stream flow at the occurrence.

Pleasant Valley mariposa lily (Calochortus clavatus var. avius): *C. clavatus var. avius* tends to be found in open stands of conifers and is believed to be intolerant of deep shade and/or thick duff. Fire was likely a key component in maintaining open habitat on the Eldorado NF prior to widespread fire suppression activities. Post-fire surveys on the Eldorado NF support the importance of fire for maintaining suitable habitat for Pleasant Valley Mariposa lily, with a significant spike in the number of new occurrences discovered the year after Cleveland Fire. Although no new occurrences of Pleasant Valley Mariposa lily were found in 2009 in the Raintree project area, potential habitat was found. The proposed Rx burn could indirectly benefit any undiscovered individuals by reducing duff and cover of competing vegetation and opening up the overstory. Fall burns are generally conducted on the Eldorado NF which would be favorable for any undiscovered occurrences within the project area.

Uneven-aged timber management, and thin from below harvest prescriptions appears to have had a neutral to favorable effect on *C. clavatus* var. *avius* habitat on the Eldorado National Forest. While impacts from ground disturbing equipment can directly impact individuals, the resulting reduction in overstory canopy does provide suitable habitat for this shade-intolerant species.

Three-bracted onion (Allium tribracteatum), Hutchison's lewisia (Lewisia kelloggii var. hutchisonii): Both species occur in rock outcrops with either cobbly lava cap or granitic soils. Neither species was found but some potential habitat was observed in the project area. Design criteria for the Raintree project excluding equipment from shallow soils (unless approved by unit botanist and soil scientist) should limit indirect effects from equipment staging and operation in potential habitat for three-bracted onion and Hutchison's lewisia. Indirect effects to these sensitive plants may occur if non-native plant species are introduced into suitable habitat in the vicinity of potential habitat (see invasives section below).

Bolander's Bruchia (Bruchia bolanderi), Blandow's bogmoss (Helodium blandowii), Moonworts (Botrychium spp): These species occur in mesic habitat including wet meadows, fens, springs, streamsides, and wet ditches. Indirect effects of concern for undiscovered individuals include altered microsite hydrology and canopy cover. Project design criteria for special aquatic features would greatly reduce the potential for effects to undiscovered individuals from thinning activities, handline construction, and Rx burning. While active ignition would not occur within 25 feet of aquatic features there is still a remote chance for indirect effects to potential habitat or undiscovered individuals from implementing the proposed prescribed fire.

Mountain lady's slipper (Cypripedium montanum): Mountain Lady Slipper grows in moist sites near streams or sometimes near the edge of small seeps. It can also grow in relatively dry conditions on hillsides and in mixed conifer forests. Mountain lady's slipper is susceptible to drastic reductions in canopy cover. However, it is also generally believed that the orchid has been impacted across its range by a general increase stand density due to widespread fire suppression in the Sierra Nevada (USDA R5, 2005). The use of GTR-220 (North et al., 2009) to design thinning prescription for the Raintree PHP may improve stand condition for this orchid, by increasing diversity in stand structure and composition while promoting broadleaf understory species. The resulting forest composition and structure is expected to be similar to the potential habitat for this species (USDA 2006) although it should be noted that short-term effects of soil disturbance and alteration in microsite conditions would likely impact any undiscovered orchids in the project area.

The effects of fire on lady's slipper species appears to depend on fire intensity and landscape scale. High intensity fires are one of the greatest threats to mountain and clustered lady's slippers since the orchid is intolerant to fires that burn through the litter layer above mineral soil (USDA R5, 2005). The species may tolerate less intense fires that do not eliminate the duff layer and leave the forest canopy fully or partially intact. The prescribed fire in the Raintree project area is expected to be patchy in intensity and distribution. Overall the expected reduction in fuel loading accomplished after implementing the project should improve habitat quality for Mountain lady's slipper orchid by reducing the potential for future high intensity wildfires.

Sporax stump treatments: The proposed project includes the application of Sporax as a fungicide to white fir stumps greater than 14 inch dbh in the project area. The Forest Service has developed risk assessments to address potential ecological risk of using various pesticides on humans and other species in the environment. In these documents, the process of risk assessment is used to quantitatively evaluate the probability (i.e. risk) that a pesticide use might pose harm to humans or other species in the environment. Based on this analysis for Sporax, non-target terrestrial and aquatic plants do not appear to be at risk from

exposure to borax at the maximum application rate proposed for the Raintree project (SERA, 2006), so indirect effects to FS Sensitive species are unlikely.

Noxious Weeds: Soil disturbances in conjunction with overstory canopy reduction during project related activities provide opportunities for the introduction and proliferation of invasive plant species (USDA Forest Service, 2001). These species have the potential to quickly outcompete native plants including Sensitive plants for sunlight, water, and nutrients. These species often form dense monocultures which may adversely impact habitat for Sensitive plants (Zouhar et al, 2008). Seeds of these species could be carried into Sensitive plant areas on equipment, vehicles, and workers boots and clothing. The magnitude of this impact is difficult to predict since it is contingent on the introduction of a noxious weed species into an area, an event which may or may not occur. Design criteria for cleaning equipment prior to arriving in the project area would reduce the potential introduction of noxious weeds from outside of the project area, but these preventive measures cannot completely eliminate potential introductions of noxious weeds.

Currently the only ENF list A noxious weeds known in the project area includes two infestations of rush skeleton weed. These occurrences are near units 619-227 and 619-228 and would be flagged for avoidance during project activities. There is also approximately five acres of cheatgrass within five plantations (619-039, 619-062, 619-036, 619-076, 619-012) in the project area. To minimize potential spread throughout the proposed project area equipment would be cleaned prior to moving to uninfested areas from the above plantations.

Cumulative Effects. Past anthropogenic disturbances within the project area include homesteading, grazing, wildfire, timber harvest, roads created for timber harvest, dispersed camping, and off-highway vehicle use.

Past timber harvest activities, off-road vehicles, grazing, and dispersed camping likely resulted in soil compaction in forested areas as well as degradation of special aquatic features (fens, wet meadows, seeps) and stream channels in the proposed project area. These past actions could have resulted in the loss of plant species that are currently listed as FS Sensitive plant species. Specifically, heavy logging and road construction around the north fork of the Consumnes has likely impacted stream condition for aquatic lichens. The project area also contains numerous Forest Service and private roads. Road construction is known to alter hydrologic processes, result in soil compaction, and could facilitate the introduction of invasive plant species (Gelbard and Belnap, 2003).

Past activities have also lead to the introduction of non-native invasive species and may have also caused the extirpation of undiscovered Sensitive plants. Together current environmental condition in the project area suggest that past human actions have adversely affected overall forest health and stand structure, riparian vegetation, and altered the flora within the proposed project by introducing non-native plant species and altering potential habitat for native plant species. Unfortunately it is impossible to quantify losses and changes in biodiversity for the project area, but it is generally accepted that many plant communities in the Sierra Nevada are outside the historic range of variability due to past human activities (Skinner and Chang 1992, Stephens SL and JJ Moghaddas, 2005, Shevock, 1996).

Noxious weeds: Within the Raintree project area the potential for noxious weed introduction is expected to remain due to the various recreation and OHV activities that occur in the project area. To some extent the Raintree project would reduce potential for future noxious weed spread from these potential vectors by closing approximately 8 miles of non designated routes to future vehicle travel. The Eldorado National Forest Noxious Weed program is also expected to continue monitoring and managing noxious weed

infestations across the forest, and would take necessary action to address new noxious weed infestations that may occur in the project area. Continued outreach and education regarding noxious weed issues to various user groups in the area may also reduce future introduction of noxious weeds in the project area.

There are future management activities planned across the Eldorado National Forest and within the Raintree Forest Health project area on public and private lands. These projects include fuels reduction, thinning, timber harvest, prescribed burning, and hazard tree removal along roads and trails. Fire suppression activity would also occur in the event of a wildfire in the project area. On all public lands managed by the US Forest Service necessary protection measures would be used to prevent losses to Sensitive plant species during the afore mentioned activities.

Adverse impacts to Sensitive plants from recent (1989-current) activities have been largely minimized by the use of mitigation measures, mainly through surveys and avoidance of Sensitive Species on NFS lands. It is anticipated that future impacts to Sensitive plants would continue to be minimized through such actions. Therefore, the potential for *adverse cumulative effects* from proposed activities under Alternative 1; past activities; and reasonably foreseeable actions is expected to be negligible for Sensitive plants since adverse impacts to Sensitive plants within the proposed project and across the Eldorado NF would continue to be avoided for all known populations (SNFPA ROD).

Alternative 2 (No Action)

Direct and Indirect Effect. The risk of high intensity crown-fires is believed to remain without the proposed fuel reduction in Alternative 1, 3 and 4 (see fuels report for Raintree). High intensity crown-fires in the Sierra Nevada tend to result in homogenous conditions post-fire with less diversity of understory plant species when compared to low intensity underburns (Knapp and Keeley, 2006). High-intensity wildfires also result in accelerated erosion, sedimentation, and altered hydrologic processes, all of which could negatively affect habitat quality for some Sensitive plant species (Neary *et al*, 2005). In addition, fire-suppression activities during large uncontrolled wildfires may increase the spread of invasive plant species which could negatively impact potential and occupied habitat for Sensitive plants (Zouhar *et al*, 2008). Together, these studies suggest that uncontrolled high-intensity wildfires could affect sensitive plant species either through direct impacts (crushing or digging up plants), altering habitat quality, or potentially facilitating the invasion of noxious weeds.

In the event of a high intensity wildfire in the Raintree project area it is possible that *Peltigera hydrotheria* would be negatively affected. The severity and extent of such affects from large wildfires is highly variable and depends on many factors. However, a large, high-intensity wildfire could remove riparian vegetation in the drainage and also increase sedimentation in the NS4 and NS10. Since the aquatic lichen is typically found growing in cool, clear-perennial streams the loss of riparian vegetation shading the stream and increase sedimentation following a fire would likely impact the Sensitive lichen.

Cumulative Effects. Existing environmental condition in the project area for Alternative 2 is the same as described for Alternative 1.

Current and future management activities expected within the proposed project area include hazard tree removal. It is also expected that fire suppression activities would occur in the event of a wildfire in the project area.

The cumulative effects of past activities (logging and fire suppression), current and future management, and the no action alternative are potentially adverse for known and any undiscovered sensitive plants

within the project area. Past fire suppression and continued increases in fuels and stand density under the no action alternative may increase the probability of high severity wildfire occurring within the proposed project area. Both fire suppression activities and large tracks of bare ground after high severity wildfire are extremely susceptible to invasive plants (Zouhar et al, 2008). The potential introduction and proliferation of invasive species as well as potential sedimentation and altered hydrologic processes (Neary et al, 2005) after an uncontrolled wildfire could adversely impact potential habitat for some Sensitive plants under the no action alternative.

Cumulative effects for ENF sensitive plants with regards to potential climate change are similar for alternative 1 and 2 since known Sensitive plant occurrences would continue to be protected from future impacts.

Alternative 3 (Non-Commercial)

Direct, Indirect, and Cumulative Effects. Direct effects for Alternative 3 are expected to be similar to the proposed action, since both alternatives would include ground disturbing activities and prescribed fire. There is always a remote possibility for a Sensitive plant population to be overlooked within the project area. If this occurs Alternative 3 would result in similar negative direct effects to undiscovered populations as described under alternative 1.

Indirect effects from ground based harvest equipment for Alternative 3 are expected to be very similar to Alternative 1. However, Alternative 3 is expected to maintain slightly more canopy cover within the project area as a result of the lower DBH limit. The projected differences in canopy cover could indirectly affect potential habitat for Sensitive plant species if noxious weeds are introduced into the project area. If this were to occur Alternative 3 would be slightly less susceptible to noxious weed establishment than Alternative 1 because noxious weeds are generally less competitive when shaded by overstory conifers. If noxious weeds are not introduced into the project area the expected differences in forest structure between Alternative 1 and 3 (canopy cover, stand density, etc) would not significantly alter the quality of potential Sensitive plant habitat within the project area. The negative indirect effects to potential sensitive habitat from ground disturbing activities should be similar for both alternatives if it occurs in potential habitat for sensitive species (see effects for Alternative 1).

Alternative 3 is expected to be similar to Alternative 1 in reducing the risk for high intensity wildfire within the project area. The expected reduction in risk for high severity wildfire would indirectly benefit Sensitive plant species with the proposed project area as described for Alternative 1. Under Alternative 3 the reduced potential of high severity wildfire would indirectly benefit the aquatic lichen (*Peltigera hydrotheria*) in the project area (described further under Alt 2).

Cumulative effects for Alternative 3 would be similar to those described for Alternative 1.

FIRE AND FUELS

The direct, indirect, and cumulative effects to fuels and fire are summarized from the Fire History, Fire Hazard, Fire Risk, and Air Quality Analysis Report (Riesenhuber, 2011).

Alternative 1 (Proposed Action).

Direct, Indirect, and Cumulative Effects. Introduces multiple types of timber harvest prescriptions (thinning from below, group selection cut, hand cut/pile/burn, lop and scatter, etc.), prescribed fire and a combination of both to treat 9,144 acres within the Raintree treatment units. Stephens and others (2009) discuss treatment effectiveness of mechanical only, prescribed fire, and a combination mechanical and prescribed fire. These results highlight the effectiveness of reducing surface fuels, thinning from below, and retaining the larger dominant and co-dominant trees in residual stands for reducing fire severity and increasing forest resilience (Agee & Skinner, 2005). The essence of the Raintree project (Alternative 1 - Proposed Action) focuses on treating surface fuels, thinning from below to reduce aerial fuel ladders, improving stand resilience by retaining large diameter trees and promoting a vegetation mosaic with the use of prescribed fire to maintain fire resiliency.

As plantation trees become larger they shade out the intolerant brush species such as Manzanita, Whitethorn and Deer brush. Prescribed understory burning would scorch the lower branches and bowls of the trees thereby naturally reducing the ladder fuels. Re-introducing fire to the plantations with dense brush could result in higher mortality of trees due to the continuous surface to ladder fuels. Overtime the plantation units would mimic open timber stands with minimal surface and ladder fuels present, thereby continuing to serve as effective fuel treatments.

Proposed treatment units are located in strategic topographical locations. Utilizing the relatively flat terrain along the ridgelines, allows fire suppression resources the ability to strategically utilize the fuel reduction treatment area as an anchor point to conduct a burnout operation if a fire were to establish itself within one of the many drainages. Fuel reduction treatment units identified on slopes would potentially buffer the ridge top treatments from spotting; as fire enters the treatment on the slopes, fire intensities, and flame lengths would decrease in the treated areas there by reducing the potential for crown fire initiation, a contributing factor to long range spotting.

Alternative 2 (No Action)

Indirect and Cumulative Effects. Current fuel conditions do not compare to historical Sierra Nevada fire ecology for the lower montane forest zone. Dense pockets of small diameter conifers, plantations with brush species growing between trees and surface fuel accumulations from the absence of fire contributes to the potential of a landscape replacing fire. Fuel conditions within the project area would continue to naturally accumulate, out pacing natural decomposition rates, increasing the amount of hazardous fuel loading already available from previous activities such as (but not limited to) fire suppression, domesticated live-stock grazing, and past logging activities.

In the event of a wildland fire within the North Fork Cosumnes Drainage, opportunities to contain/suppress a fire would continue to be difficult to control due to the current condition of forest fuels; critical holding and containment points would require large numbers of fire personnel and equipment to perform such actions as establishing control lines, preparing for burning and holding operations.

Alternative 3 (Non-Commercial)

Direct, Indirect and Cumulative Effects. Proposed treatments would remain the same as the Proposed Action except that units proposed for commercial thinning in the Proposed Action would not harvest trees

larger than 10 inches dbh. This increase of approximately 40 trees per acre would continue to shade the understory while also reducing the surface wind speeds.

Expected results would mirror Alternative 1 within the commercial plantation stands and prescribed burn units. Follow up treatment would continue to keep surface fuels low creating a separation between the canopy and surface fuel layers.

RECREATION

The direct, indirect and cumulative effects to recreation resources are summarized from the Recreation Report (Bounds, 2011).

Alternative 1 (Proposed Action) and Alternative 3 (Non-commercial)

Direct Effects, Indirect, and Cumulative Effects. The Raintree Forest Health Project would provide for aspen and hardwood enhancement, a reduction in overstocked stands and remove dead and dying trees which would enhance the visual quality of the dispersed camping areas along the river. Removal of hazardous trees would also provide for additional safety in the popular dispersed camping areas. Removal of heavy accumulations of logs in existing dispersed camping areas would increase opportunities and improve the experience for recreationists by providing more useable area.

This project would close approximately 47 miles of system and non-system roads and trails and would help implement the Eldorado National Forest Travel Management Plan. In addition, an estimated 30 existing landings used in this project would be ripped to minimize erosion problems, restore infiltration, and discourage unauthorized motor vehicle use.

This project would close approximately 47 miles of system and non-system roads and trails and would help implement the Eldorado National Forest Travel Management Plan.

Alternative 2 (No Action)

Indirect and Cumulative Effects. Dispersed camping along the river would continue. Additional dispersed campsite parking areas would not be delineated and non-system roads and trails would not be physically closed but would be illegal for use. The potential for wildfire in this area is great and would reduce the visual quality and decrease the desirability to disperse camp. A catastrophic wildfire would reduce the recreational value for which the North Fork Consumnes River is eligible for designation as a Wild and Scenic River.

FOREST HEALTH PROTECTION

The direct, indirect and cumulative effects to forest health are summarized from the Insect and Disease Evaluation Report, #SS11-02 (MacKenzie and Bulaon, 2011) and Silviculture Report (Howard, 2011).

Information is also based on extensive site visits by the project silviculturist, and on an insect and disease risk evaluation and on-site visits made by personnel from State and Private Forestry, USDA Forest Service, Region 5 Forest Health Projection, South Sierra Shared Service Area.⁴

Alternative 1 (Proposed Action) and Alternative 3 (Non-Commercial)

Insects

Direct Effects: Short and long term direct effects would occur as a result of implementing Alternatives 1 and 3. It is expected treatment activities would directly decrease the likelihood and susceptibility of catastrophic insect epidemics, mainly because of improved growth and vigor of residual trees through stocking control within the treatment units. There is considerable evidence that less dense stands of white fir, ponderosa pine, lodgepole pine are less likely to experience mortality caused from bark beetles than are higher-density stands.⁵ However, tree mortality caused by bark beetles is expected to continue for all species in all diameter classes within the project area, mainly from *Dendroctonus* spp. Since only 37% of the project area of 9,144 acres would be mechanically thinned, there is considerable amount of acreage left untreated and bark beetle populations would continue to have sustained suitable habitat in the short and long term.

Thinning is not likely to directly reduce a stand's potential for infestation from defoliators such as, Douglas-fir tussock moth. However, increasing diversity of species composition or altering current structure would reduce host availability, and mitigate overall impact from forest pests. Resistance mechanisms and resilience improve when water and nutrient resources are available for trees. In addition, providing habitat for insect-feeding birds and protecting ant nests are ways of maintaining natural insect predators in forest stands.

Indirect Effects: Since the treatment areas would have improved growing conditions, the overall resistance of the timber stands to environmental stress, including insect attack, drought, or disease would improve within the treatment units. As a result, mortality levels would decrease and net cubic volume and gross cubic volume growth of the timber stands would become more nearly the same. Effects of wind would be minimal because the canopy would remain relatively intact and the large wind firm trees are retained in the treatment units.

Cumulative Effects: Those effects listed above could be expected to continue. Other present and future management actions within the planning area would have minor cumulative effects to biodiversity and vegetation resources.

Pathogens

Direct and Indirect Effects: Short and long term direct effects would occur as a result of implementing Alternatives 1 and 3. It is expected that nominal changes to population levels and the spread of pathogens within the project area would occur. Since 63% of the project area would not be treated though selective thinning, populations of *Cytospora*, *Arceuthobium*, *Armillaria*, and *Heterobasidion*, etc. would continue to have suitable habitat to sustain their presence in the project area. While the implementation of this alternative would not eliminate the major diseases it would suppress them and bring their levels closer to

⁴ *Insect and Disease Risk Evaluation of the Raintree Forest Health Project*. Martin MacKenzie and Beverly Bulson. January 2011.

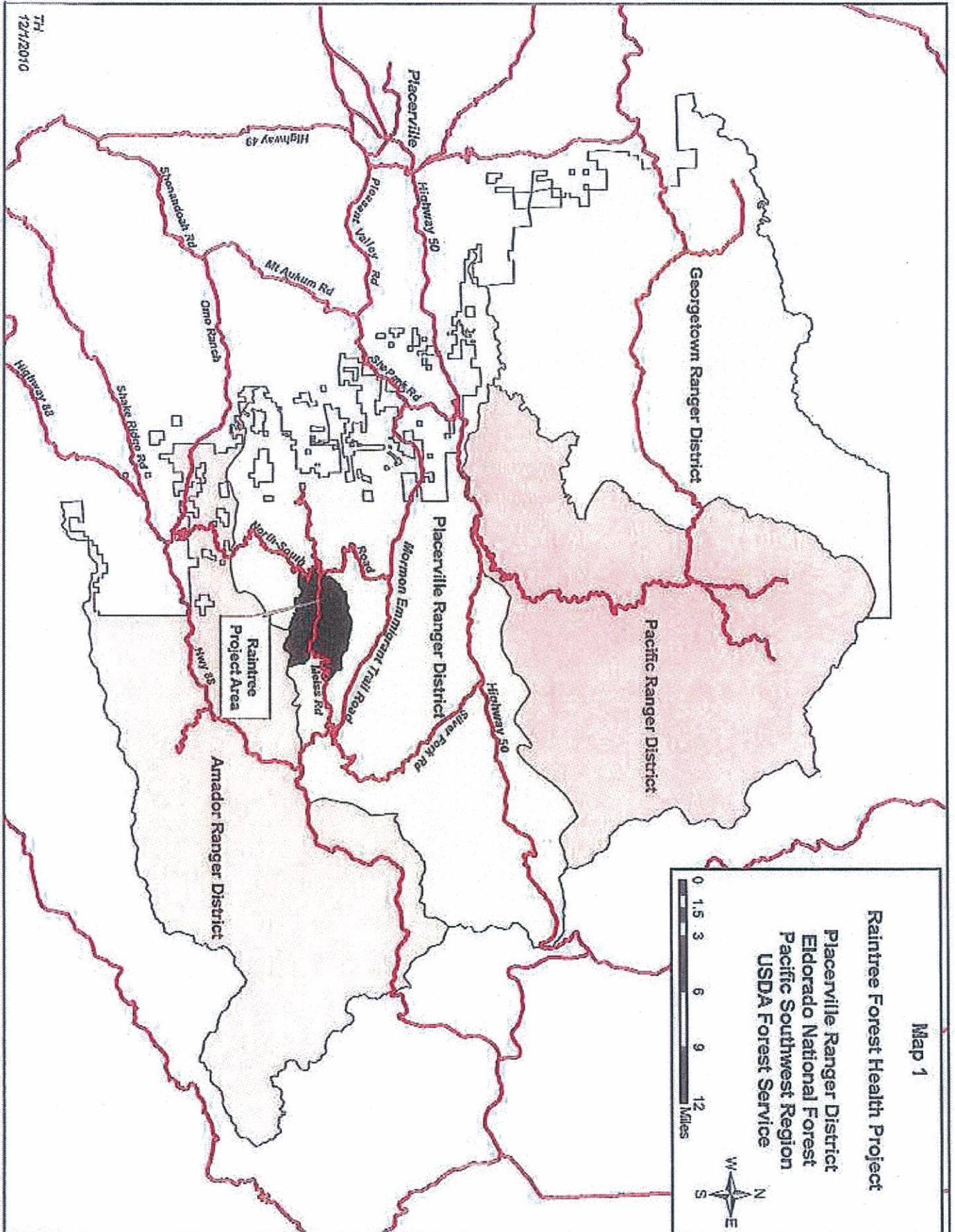
⁵ USDA Forest Service. PNW-RN0525. 1998. *Examples of mortality and reduced annual increments of white fir induced by drought, insects, and disease at different stand densities*. P.H. Cochran

what were the historic levels existing before decades of, fire suppression, grazing and Sporax-free salvage logging allowed the ecosystem to get out of balance and favor the insects and diseases. Even within the treated areas, root, stem, and foliar pathogens would not be totally eradicated. Furthermore, these pathogens would continue to predispose some untreated areas to bark beetle attack and in some cases predisposing factors can override the apparent benefits of lower stand density and greater growth efficiency.

Cumulative Effects: Those effects listed above could be expected to continue and slowly bring the area closer to the desired condition. Other present and future management actions within the planning area would have minor cumulative effects to biodiversity and vegetation resources.

Alternative 2 (No Action)

Indirect and Cumulative Effects. Alternative 2 would result in the following effects when compared to Alternatives 1 and 3. There would be a greater risk of adverse effects to insects and pathogens as a result of a high severity wildfire.





United States
Department of
Agriculture

Forest
Service

Eldorado National Forest
Placerville Ranger District

4260 Eight Mile Road
Camino, CA 95709
(530) 644-2324 (Voice)
(530) 647-5344 (TTY)

File Code: 1950

Date: March 18, 2011

Dear Interested Citizen:

The Placerville Ranger District on the Eldorado National Forest proposes to conduct vegetation management activities and other management actions to mitigate the hazards associated with wildfire and forest health on approximately 9,114 acres in the North Fork of the Consumnes drainage. The name of the project is "Raintree Forest Health Project". This area was selected for the project because past history indicates a high likelihood of a major wildfire occurring within this general area and the overall need to meet multiple project objectives. The risk of high intensity wildfire in the area constitutes a very real threat to life, watershed, and wildlife habitat. The intent of this project is to reduce wildfire risk and improve forest health while sustaining old forest conditions and enhancing wildlife habitat.

Proposed activities would occur on approximately 9,144 acres. The Raintree project area is situated south of Highway 50, and south of the Mormon Emigrant Trail Road, including the general area between Capps Crossing and Leck Spring Lookout. Treatments and other management actions would commence in 2012 and be completed by 2017. Proposed activities would include commercial and pre-commercial understory thinning of mixed conifer stands and plantations, aspen and hardwood enhancement, enhancement of watershed conditions, hazard tree removal adjacent to system roads and dispersed camping areas, reconstruct and repair system roads, grapple and machine piling, mastication, watershed restoration activities and prescribed understory burning.

Attached is a Preliminary Environmental Assessment developed by my interdisciplinary team. If you have any questions about this proposal, or would like more information, please contact Tim Howard at (530) 647-5382.

Public Participation:

Written, facsimile, hand-delivered, oral, and electronic comments concerning this action will be accepted for 30 calendar days following the publication of the notice of proposed action in the Mountain Democrat. The publication date in the newspaper of record is the exclusive means for calculating the comment period for this analysis. Those wishing to comment should not rely upon dates or timeframe information provided by any other source. The regulations prohibit extending the length of the comment period.

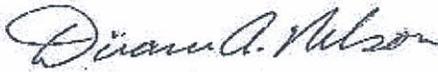
Written comments must be submitted to the Placerville District Ranger, Duane Nelson, 4260 Eight Mile Road, Camino, CA, 95709. Comments may be submitted by FAX 530-647-5311 or by hand-delivery to the address above, during normal business hours Monday-Friday 8:00 a.m. to 4:30 p.m.

Oral comments must be provided during normal business hours via telephone 530-644-2324 or in person. Electronic comments, in acceptable [plain text (.txt), rich text (.rtf) or Word (.doc)]



formats, may be submitted to comments-pacificsouthwest-eldorado-placerville@fs.fed.us. In cases where no identifiable name is attached to a comment, a verification of identity will be required for appeal eligibility. If using an electronic message, a scanned signature is one way to provide verification. It is the responsibility of persons providing comments to submit them by the close of the comment period. Only those who submit timely and substantive comments will have eligibility to appeal the subsequent decision under 36 CFR 215. Individuals and organizations wishing to be eligible to appeal must meet the information requirements of 36 CFR 215.6.

Sincerely,



DUANE A. NELSON
District Ranger



United States
Department of
Agriculture

Forest
Service

Pacific
Southwest
Region

Regional Office, R5
1323 Club Drive
Vallejo, CA 94592
(707) 562-8737 Voice
(707) 562-9240 Text (TDD)

File Code: 1570
Appeal No.: 12-05-00-0005-A215
Date: March 15, 2012

Chad Hanson, Ph.D.
John Muir Project
P. O. Box 697
Cedar Ridge, CA 95924

CERTIFIED - RETURN
RECEIPT REQUESTED

Dear Mr. Hanson:

On January 26, 2012, you filed a Notice of Appeal (NOA) on behalf of John Muir Project pursuant to 36 CFR 215. Eldorado Forest Supervisor Kathy Hardy signed the Decision Notice (DN) approving Alternative 1 of the Raintree Forest Health Project Environmental Assessment (EA) on December 12, 2011.

I have reviewed the entire appeal record, including your written Notice of Appeal (NOA), the DN, EA, and supporting documentation. I have weighed the recommendation from the Appeal Reviewing Officer (ARO) and incorporated it into this decision. A copy of the Appeal Reviewing Officer's recommendation is enclosed. This letter constitutes my decision on the appeal and on the specific relief requested.

FOREST ACTION BEING APPEALED

The Placerville Ranger District on the Eldorado National Forest proposes restorative and preventative treatments and management actions in order to improve the forest health and re-establish a sustainable landscape condition on public lands within the Raintree project area. The Placerville Ranger District proposes to implement activities to reduce fuel loads and fire hazards, and to improve wildlife habitat, watershed condition, and forest growth, while considering effects on other resources and activities. Treatments and other management actions will commence in 2012 and be completed by 2017. Proposed activities include commercial and pre-commercial understory thinning of mixed conifer stands and plantations, enhancing aspen and hardwood habitat, removing hazard trees adjacent to system roads and dispersed camping areas, reconstructing and repairing system roads, grapple and machine piling, masticating brush and small trees, restoring watershed function, and prescribed understory burning.

APPEAL REVIEWING OFFICER'S FINDINGS and RECOMMENDATION

Documentation demonstrated compliance with applicable laws, regulations, and policies in light of the 22 appeal issues raised by appellants.



The ARO, Nancy Gibson, found that the project is an appropriate and reasonable response to direction in the Eldorado National Forest Land and Resource Management Plan and is in compliance with the plan.

The Forest Supervisor's decision logic and rationale were clear and well documented in the Decision Notice and Finding of No Significant Impact (DN/FONSI). The Forest Supervisor was responsive to public concerns as noted in Appendix A of the EA.

ARO Nancy Gibson recommended affirming the Forest Supervisor's decision on all issues and denial of all requested relief.

DECISION

I agree with the ARO's analysis as presented in the recommendation letter. The issues are similar to the comments made by John Muir Project during the comment period. All appeal issues raised have been considered. I affirm the Forest Supervisor's decision to implement Alternative 1. I deny all requested relief.

The project may be implemented on, but not before, the 15th business day following the date of this letter [36 CFR 215.9(b)]. My decision constitutes the final administrative determination of the Department of Agriculture [36 CFR 215.18(c)].

Sincerely,

/s/ Ronald G. Ketter
RONALD G. KETTER
Deputy Regional Forester
Appeal Deciding Officer

Enclosure



United States
Department of
Agriculture

Forest
Service

Pacific
Southwest
Region

Regional Office, R5
1323 Club Drive
Vallejo, CA 94592
(707) 562-8737 Voice
(707) 562-9130 Text (TDD)

File Code: 1570-1

Date: March 13, 2012

Subject: Raintree Forest Health Project
Appeal No. 12-05-00-0005-A215
Eldorado National Forest

To: Appeal Deciding Officer

I am the designated Appeal Reviewing Officer for this appeal. This is my recommendation on disposition of the appeal filed by Chad Hanson on behalf of The John Muir Project appealing the Eldorado National Forest Supervisor, Kathy Hardy's, Decision Notice (DN) for the Raintree Forest Health Project Environmental Assessment (EA). The decision was signed on 12/12/2011, and the legal notice of the decision was published on 12/16/2011.

DECISION BEING APPEALED

The Placerville Ranger District on the Eldorado National Forest proposes restorative and preventative treatments and management actions in order to improve the forest health and re-establish a sustainable landscape condition on public lands within the Raintree project area. The Placerville Ranger District proposes to implement activities to reduce fuel loads and fire hazards, and to improve wildlife habitat, watershed condition, and forest growth, while considering effects on other resources and activities. Treatments and other management actions will commence in 2012 and be completed by 2017. Proposed activities include commercial and pre-commercial understory thinning of mixed conifer stands and plantations, enhancing aspen and hardwood habitat, removing hazard trees adjacent to system roads and dispersed camping areas, reconstructing and repairing system roads, grapple and machine piling, masticating brush and small trees, restoring watershed function, and prescribed understory burning.

The Raintree project area lies within the Placerville Ranger District of the Eldorado National Forest and is situated south of Highway 50 and south of the Mormon Emigrant Trail Road, including the general area between Capps Crossing and Leek Spring Lookout. The Project Area covers approximately 9,144 acres located entirely in El Dorado County, California, in T.9N., R.14 E., in all or portions of Sections 1-3, and 10-15; T.9N., R.15 E., in all or portions of Sections 3-10, and 16-21; T.10N., R.14E., in all or portions of Sections 35 and 36; and T.10 N, R.15E., in all or portions of Sections 31 and 32; M.D.B & M. Elevations range from 5,000 feet at the North Fork Consumnes River on the west edge of the project area to 6,500 feet on Baltic Ridge on the north edge of the project area. The area is accessed from Highway 50 by Sly Park Road to Mormon Emigrant Trail Road then to the North South and Meiss Roads.



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PURPOSE AND NEED FOR ACTION

The purpose of the proposed treatment activities in the Raintree project area is to modify the forest vegetation in order to put it on a trajectory toward the desired conditions for: (1) reduced tree density; (2) sustained old forest conditions; (3) enhanced wildlife habitat; (4) reduced wildfire risk; (5) improved long-term scenic sustainability; (6) increased recreational opportunities; (7) enhanced riparian conservation areas; and, (8) maximized revenue derived from commercial products to perform essential and costly biomass removal and surface fuel treatments.

This action is needed to: (1) improve the forest health across the Raintree project area; (2) reduce the fuel loading to reduce the threat of wild fire; (3) maintain and enhance the existing old growth conifers, aspen and oak component; (4) maintain and enhance recreation opportunities; (5) treat hazardous fuels in a cost-effective manner to maximize treatment acres under a limited budget while fulfilling the role the Forest Service has in providing a wood supply for local manufacturers; (6) provide a maintainable level of forest access while closing unneeded roads and motorized trails to enhance wildlife habitat and reduce wildlife harassment; (7) enhance and maintain Strategically Placed Area fuels Treatments (SPLAITS)¹ designed to slow the spread of wildfire; and (8) enhance soil productivity within plantations by increasing soil cover.

Additionally, there is a need to improve watershed condition and related ecosystem services by improving the conditions of several streams and riparian zones in the project area. Improvements include: maintaining or restoring the geomorphic and biological characteristics of special aquatic features within riparian zones, streams, including in stream flows, and hydrologic connectivity both within and between watersheds to provide for the habitat needs of aquatic species.

This action responds to the desired conditions, management intent, and management objective by land allocation outlined in the Sierra Nevada Framework Plan Amendment (SNFPA) Record of Decision.

In meeting the purpose and need for this project, standards and guidelines for treatment activities and resource protection will be adhered to during project implementation. These standards and guidelines are described in the Eldorado's Land and Resource Management Plan (LRMP) and the SNFPA.

¹ Strategically placed area fuels treatments are non-overlapping treatment areas, spatially positioned to efficiently and effectively change fire behavior at the landscape scale. Conceptually, SPLAITS are intended to slow fire growth and modify behavior while minimizing the amount of treated area required. The SPLAT arrangement changes fire behavior by forcing the fire to repeatedly flank around areas of treated fuels. Thus, the rate of growth of the fire is slowed, and its intensity and severity reduced. The locations of the treatment areas emphasize actions needed to make SPLAITS effective in terms of interrupting wildfire rates of spread and burn intensity.

APPEAL SUMMARY

The project proposal was listed in the Eldorado National Forest Schedule of Proposed Actions (SOPA) each quarter since July 2008. The project proposal was provided to the public and other agencies (totaling 12 groups or interested parties) for comment during scoping on August 26, 2009. On May 7, 2010, another scoping notice was provided to the public and others for additional comments due to changed conditions of the proposed project. (See scoping notice and mailing list in the Project Record).

Three individuals responded to the scoping notice.

As part of the public involvement process, the Placerville Ranger District initiated post-scoping stakeholder meetings and field trips on August 3, 2010, and October 22, 2010. The primary purpose of these meetings and field trips was to offer an opportunity for stakeholders to help Forest Service officials identify problems and provide feedback on proposed actions before a formal proposal was submitted for public comment. Stakeholders involved included representatives from the El Dorado County Fire Safe Council, Sierra Forest Legacy, and Forest Service specialists. (See collaboration meeting notes in the Project Record [PR]).

A preliminary Environmental Assessment was mailed to the public and a legal notice published in the Mountain Democrat newspaper on March 3, 2011. A total of 17 PEA packages were mailed. Six timely comment letters were received during the 30-day comment period to the PEA. Forest Service responses to public comments on the Raintree Forest Health Project PEA are located in Appendix A.

The District also provided an opportunity for the public to continue their involvement with the Raintree project in the form of a collaboration meetings and field trips after the publication of the PEA. There was a meeting held on June 24, 2011.

Important issues were raised; therefore, alternatives other than the Proposed and the No Action alternatives were fully developed for analysis.

The legal notice of decision was published 12/16/2011, and the deadline for filing appeals was 01/30/2012. The current appeal was filed on 01/26/2012, and is timely.

The Forest Supervisor had a conference call with the appellant Chad Hanson representing the John Muir Project on 2/2/2012. No issues were resolved.

As relief, the appellant requests that the EA and DN be withdrawn and an EIS or, at a minimum, a supplemental EA, be prepared.

ISSUES AND RESPONSES

Issue 1:

Since the preliminary EA was released, new information has emerged that suggests that spotted owls have been and are declining at a precipitous rate in the central Sierra Nevada. The Forest Service must fully and adequately analyze the impacts and implications of projects such as this one in light of this significant new information (Appeal, pg. 1).

Response: "Agencies shall insure the professional integrity, including scientific integrity of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement" (40 CFR 1502.24).

"Supplement or revise an EA if the interdisciplinary review of new information or changed circumstances indicates that changes in the EA are needed to address environmental concerns that have a bearing on the action or its impacts" (FWSH 1909.15, section 18.4).

The project used best available science available at the time of decision with regard to the California spotted owl. The report that was provided with this appeal (pp. 33-34) does not fully described how the graphs were created, what models were used, or other details on how the information presented was derived. Without additional information, this data cannot be interpreted or applied. The owl products/collaboration listed in this report (p. 35) are not published; they are "In Prep.", "In Review", or "In Press;" thus, are not available for consideration to date. The Forest should remain diligent in tracking any final outcomes produced by this ongoing research and should review the analysis for this project as appropriate.

At the time the Decision was signed, the latest spotted owl meta-analysis available for consideration was conducted in 2005 (Blakesley, et al. 2006), brought about for the USDI Fish and Wildlife Service to conduct a status review of the California spotted owl population. This information was incorporated into the Terrestrial Wildlife BE (pp. 23-24). Their finding was based on the following factors: 1) best available data (Blakesley et al. 2006 in Federal Register 2006) indicating populations are stationary throughout the Sierra with no strong evidence of declining trend...(Federal Register 2006).

At the time the Decision was signed, the latest information from the Eldorado Study Area available for consideration was "Population Ecology of the California Spotted Owl in the Central Sierra Nevada: Annual Results 2009." This information was incorporated into the Terrestrial Wildlife BE (p. 24). Further analysis regarding the treatments, including the numerous project design criteria to provide protection to the California spotted owl and its habitat, can be found in summary in the Terrestrial Wildlife BE (pp. 51-51), and in more detail (pp. 39-52).

I find that at the time the Raintree Project Decision was signed, the best available science, including the latest peer reviewed and/or published scientific information regarding spotted owls in the Sierra Nevada was incorporated into the analysis. I find that the

analysis was done at the appropriate scale, level, and detail, in consideration of the scientific information available.

Issue 2:

The EA violates NEPA because it did not fully consider an alternative proposed by the appellant:

- An alternative in which, within the roughly 3,000 acres of natural forest proposed for thinning, trees larger than 16 inches dbh would be retained.
- An alternative in which within the roughly 3,000 acres of natural forest proposed for thinning, instead of the live trees over 16" dbh being removed, the trees that would otherwise be marked for removal would instead be girdled or killed in some other way in order to actively recruit more large snags for wildlife, or such trees would be felled to provide large downed log structure for small mammals, amphibians, and invertebrates (Appeal, pp. 1-2).

Response: "Federal agencies are required to study, develop and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts of alternative uses of available resources" (42 USC 4332(2)(e)).

Three alternatives were considered but eliminated from detailed study (EA, pg. 10). Each will accomplish fuel treatments to some level less effectively than Alternative 1. As stated in the EA on page 28:

"A disadvantage in desired fuel treatment and post-treatment forest health conditions is associated with Alternatives 6, 7, and 8. Each of these alternatives proposes that more trees will be retained within treatment units. From a fuels treatment standpoint it is important to note that the treatment of the non-commercial-sized ladder fuels (biomass) and the surface fuels treatment work will be primarily funded by the sale of saw-timber from many of the commercial-sized trees that are also actually contributing to the potential for a wildfire."

Alternative 8 directly addresses the appellant's concern. Alternative 8 was considered but eliminated from detailed study (EA, p. 30). This alternative responds to the concerns that the removal of trees over 16 inches dbh is not necessary to reduce potential for severe fire. However, aside from being more costly, the increased generation of snags would contribute to a high fire risk situation in the project area and would reduce the effectiveness of fire suppression efforts. Additionally, the difference between Alternative 8 and Alternative 4 (16 inch dbh limit), which is analyzed in detail, is somewhat indistinguishable in terms of meeting the purpose and need for the Raintree project. Neither of these alternatives is the best choice to meet a key need for the Raintree project to "treat hazardous fuels in a cost-effective manner to maximize treatment acres under a limited budget while fulfilling the role the Forest Service has in providing a wood supply for local manufacturers" (EA, Appendix A, pp. 33-35).

I find that the Forest adequately considered an adequate range of alternatives; and that the EA analyzed, rejected, and documented the alternative proposed by the appellant.

Issue 3:

The additional cost of an alternative is not a reasonable or legally-defensible reason for dismissing a proposed alternative from full and detailed analysis and consideration under NEPA. This is tantamount to arbitrarily narrowing the purpose and need so that the only option is the Proposed Action (Appeal, pg. 2).

Response: "Federal agencies are required to study, develop and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts of alternative uses of available resources" (42 USC 4332(2)(c)).

The Forest Supervisor analyzed five alternatives in detail (DN/FONSI, pp. 7-8). The alternative referred to by the appellant (Alternative 8) was considered but eliminated from detailed study. The Forest gave a few reasons for not considering this alternative in detail. For example, the difference between Alternative 8 and Alternative 4 (16 inch dbh limit), which is analyzed in detail, is minor in terms of meeting the purpose and need for the Raintree project (EA, p. 30; DN/FONSI, p. 8). Also, the Forest noted that Alternative 8 would generate approximately 30,250 snags between 16 and 29.9 inches dbh, which will contribute to a high fire risk situation within the Raintree project area (EA, pg. 30). Effectiveness of fire suppression efforts will be reduced by creating more snags. Fires can generally be fought more directly and aggressively if the risks of fire fighter injury associated with snags are reduced. Greater fire suppression effectiveness will also translate to a reduced risk of catastrophic fire, but not in alternative 8. Experienced fire suppression personnel recognize that under most wild fire fighting scenarios, high numbers of snags and down logs will also contribute to fires that have high potential for long distance spotting with increased resistance to control and a decrease in safety for firefighters (*Id.*). Additionally, the increase in biomass tonnage will be greatly increased within the project area, far exceeding the standard and guidelines in the LRMP as well as not meeting the need to reduce the fuel loading to reduce the threat of wild fire (*Id.*).

The Decision Notice and Finding of No Significant Impact (DN/FONSI) describes the rationale for selecting Alternative 1 and a description of the range of alternatives that were considered (DN/FONSI, pp. 5-8).

I find that the EA considered an adequate range of alternatives, including an alternative that addressed the appellant's concerns and provided for snag and down log recruitment for wildlife species.

Issue 4:

The size of the project, and its potential impacts on spotted owls and black-backed woodpeckers, and potential cumulative impacts with other recent and planned projects (i.e. proposed timber sales) requires an EIS (Appeal, pp. 2 and 8).

Response: "Preparation of an EA is intended to provide evidence as to whether an EIS must be prepared. A FONSI (40 CFR 1508.13) presents the reasons why an action will not have significant effects, as defined in (40 CFR 1508.27), on the human environment and for which an EIS will not be prepared" (40 CFR 1508.9).

Direct, indirect, and cumulative effects are analyzed, in detail, for the California spotted owl in the terrestrial wildlife BE (pp. 23-27, 44-52, 64-65, 67, 69-70) and are summarized in the environmental consequences section of the EA (EA, pp. 33-35). The analysis of effects for the spotted owl in the EA and terrestrial BE indicated implementation of the proposed action would reduce habitat quality; however, the estimated post-treatment CWHR (California Wildlife Habitat Relationships) classification of commercial harvest stands treated will be within the range of what is considered suitable spotted owl habitat (moderate capability) (BE, p. 48). Reduction in canopy closure from thinning may be partially mitigated by retaining untreated patches (Vegetation Retention Islands) of mature forest with high canopy closure well distributed within an owl's home range (BE, pg. 45). A reduction in foraging habitat quality is expected for 1 to 5 years after treatment and canopy closure is expected to recover within 10-20 years (EA, p. 33). The treatments are expected to make this habitat more sustainable over time (BE, p. 51). The cumulative effects analysis indicates the proposed project, in combination with past forest health and fuels reduction projects, is designed to alleviate hazardous fuels conditions through understory thinning and prescribed burning (BE, p. 49). Approximately 16 percent of the suitable habitat, within the cumulative effects analysis area, would be affected by this project (BE, pp. 49-50).

No black-backed woodpecker habitat (burned forest) was identified in the project area, as is stated in the MIS report (p. 5); therefore, the project will not directly affect the ecosystem component of snags in burned forest and the black-backed woodpecker is not an appropriate MIS for this project (EA, Appendix A, pp. 29-31). For further discussion about future habitat for black backed woodpeckers, see the response to comments (EA, Appendix A, pp. 29-31).

The analysis of direct, indirect, and cumulative effects to spotted owls and their habitat in the EA, terrestrial wildlife BE, and MIS reports reveal that no significant effects to this species would result from implementation of this project.

I find that the EA contains the appropriate environmental analysis, and appropriately determined that an EIS is not necessary for this project. The Responsible Official's FONSI presents the reasons why the project will not have a significant effect on the human environment or the spotted owl.

Issue 5:

The Forest used the term "ecological resilience" when what they mean is "engineering resilience". If the Forest is promoting engineering resilience, to the detriment of native biodiversity and natural ecological disturbance processes, they must be clear about this and the adverse impacts of it (Appeal, pp. 2-3).

Response: "Agencies shall insure the professional integrity, including scientific integrity of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and

other sources relied upon for conclusions in the statement. Agencies may place discussions of methodology in an appendix" (40 CFR 1502.24).

As described in Appendix A of the EA, response to comment number 41, the Forest is in no way promoting "engineering resilience" (EA, Appendix A, pp. 35-36). By the definition utilized by the commenter, the term "engineering resilience" is *based upon the goal of maintaining a given system in an exact, unchanged, permanent state for purposes having nothing to do with biodiversity or ecosystems*. The proposed action does not state its goal as such. The term "resilience" is used to describe a desired set of conditions that are generally consistent with ecological resilience as the commenter describes (See EA, Appendix A, pg. 36).

I find that the EA did not use the term "engineering resilience", nor did the subsequent DN/ONSI. The project does not promote "engineering resilience" to the detriment of native biodiversity and natural ecological disturbance processes.

Issue 6:

The EA asserts that patches of high-intensity fire (generally termed "high-severity fire" by the Forest Service), wherein most or all trees are killed within a mosaic of low- and moderate-intensity fire effects, is "damaging" and implies that such fire is unnatural in the Sierra Nevada management region. This is flatly inaccurate. (Appeal, pp. 3-4)

Response: "Agencies shall insure the professional integrity, including scientific integrity of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement. Agencies may place discussions of methodology in an appendix" (40 CFR 1502.24).

The Forest responded to this issue in Appendix A of the EA (p. 10) in that the project is consistent with national and regional direction and priorities and addresses the historical context of wildfire within the project area and references other documents, such as the SNFPA, National Fire Plan and the Cohesive Strategy, which recognizes the amount of severe wildfire is a national problem. A mixed fire severity across the landscape that is dominated by low to moderate severity, with patches of high severity fire, would better mimic historical fire regimes within which Sierra Nevada mixed-conifer Forests evolved. However, the uncharacteristically large patches of high severity fire that have been experienced recently in the Fred's fire, Power's fire, Star fire, Moonlight fire, Cone fire, and several others across the Sierra Nevada illustrate the undesired effects of the potential wildfire hazard that has been identified within the Raintree Project Area.

I find that the EA adequately analyzed the effects of a mosaic of fire severities ranging from high to low.

Issue 7:

The EA claims that, due to insects and competition between trees, stand density must be substantially reduced supposedly in order to improve the ecological health of the

forest. No citation to any scientific document is provided by the EA to support this statement (Appeal, pp. 4-5).

Response: "Agencies shall insure the professional integrity, including scientific integrity of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement. Agencies may place discussions of methodology in an appendix" (40 CFR 1502.24).

The stand density index (SDI) discussion was included in the Insect and Disease Risk Evaluation of the Raintree Forest Health Project (Bulaon and MacKenzie, 2011) for plantations. This is an accepted scientific method. The response to comment No. 59 states that work has been completed documenting the forest conditions within Methods of Cutting plots located within the Stanislaus Experimental Forest (c. 1929). This work showed that tree density more than doubled and species composition shifted from pine to more shade tolerant white fir and incense cedar (Knapp et al. in press). What is also evident from this work is that openings in the forest structure in 1929 ranged up to 0.51 acres to almost no openings in the present day stand. Although the historic stand data may not be from the project location, it does provide information to base inferences on the resilience of the prior forest to a number of common stressors and provides a baseline for restoring forest heterogeneity. Additionally, no fewer than 14 sources were cited in the Silvicultural report for the Raintree Forest Health Project" (EA, Appendix G).

I find that the EA provided scientific documentation to demonstrate the relationship between stand density and forest health effects, appropriately considering these concerns.

Issue 8:

The EA does not state whether all stand examination data plots were used to calculate the stand density values that were reported in the EA (Appeal, pg. 5).

Response: "When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking" (40 CFR 1502.22).

There is no evidence that any plots were not used in statistical analysis. The EA does not state that any of the plots were not used in analysis; therefore, the assumption is that all plots were used (See also EA, Appendix A, response to comment #44, p. 42).

I find that the EA used all appropriate forestry data collected in the analysis.

Issue 9:

The EA does not adequately analyze the impacts that this project would have on cavity-nesting wildlife species, including Sensitive Species and Management Indicator Species, such as the spotted owl and black-backed woodpecker and hairy woodpecker (Appeal, pg. 5).

Response: "All Forest Service planned, funded, executed, or permitted programs and activities must be reviewed for possible effects on endangered, threatened, proposed, or sensitive species. The biological evaluation is the means of conducting the review and of documenting the findings" (FSM 2672.4). As per the Eldorado National Forest LRMP, as amended by the 2007 Sierra Nevada Forests Management Indicator Species Amendment, "disclosure and analysis for covered projects is as follows: every project record shall contain a discussion of the effects of the alternatives on the MIS habitat(s) that will be directly affected by the Forest Service action."

Specific guidelines for retention and recruitment of wildlife trees, snags, and downed logs will provide foraging and nesting structures for cavity-nesting wildlife in the short and long-term. Under the proposed action, treated stands would become more resilient to fire, disease, insect infestation, and would lead to a greater percentage of large trees in a shorter time frame than under the No Action Alternative. Further potential effects are described in Appendix A, in response to comment number 45 (pp. 42-43). Additionally, implementation of the proposed action will facilitate improved habitat conditions (i.e. large trees and snags) for cavity nesting species in the short and long term.

Direct, indirect, and cumulative effects are analyzed, in detail, for the California spotted owl and its habitat in the Terrestrial Wildlife BE (pp. 23-27, 39-52, 64-65, 67, 69-70), MIS Report (pp. 34-38), and are summarized in the environmental consequences section of the EA. As shown in Table I of the Raintree MIS report, the black-backed woodpecker is the MIS for effects of land management activities upon medium and large snags in burned forest, and there is no such habitat in the project area (MIS Report, pp. 4-5; EA, Appendix A, pp. 29-31). The hairy woodpecker is the MIS species selected to represent the "Snags in Green Forest Ecosystem Component."

Direct, indirect, and cumulative effects to the habitat, medium and large snags in green forest, are analyzed in the MIS report (pp. 38-42) and are summarized in the EA (pp 49-50, 52-54, 56, 58). Hazard tree removal during both the harvest and the burn associated portions of the project will reduce the average snag levels per acre in localized areas. Snag removal will reduce existing and potential foraging and nesting habitat. Project activity that occurs on the 3,094 acres in commercial units as well as up to 3,623 acres in burn only units that support coniferous forest and that could provide snags in green forest in the Raintree project, will maintain snags (except hazard trees) and levels of live recruitment trees to provide for habitat within the project area (EA, pg. 40).

I find that the EA, Terrestrial Wildlife BE, and MIS Report present adequate assessments and, where appropriate, detailed analyses regarding project impacts to cavity-nesting species (including the spotted owl, black-backed woodpecker, and hairy woodpecker) regarding the retention and recruitment of large snags.

Issue 10:

The EA does not clearly establish that the basal area mortality of conifers that would result from the combined thinning and fire/insect mortality would be less than the basal area mortality that would result from fire or insect mortality alone, or from

fire and insect mortality that would likely result after implementation of a non-commercial alternative (Appeal, pp. 5-6).

Response: The SNFPA ROD (p. 6) states the following:

"This decision improves our ability to respond to deteriorating forest health by allowing more latitude in the amount and type of vegetation that can be removed within treated areas. This decision allows for consideration of stand density during the design of fuels treatment patterns. Vegetation treatments in old forest emphasis areas are no longer restricted to prescribed fire. Some trees larger than 12 inches dbh, but smaller than 30 inches dbh, may be removed mechanically. This flexibility will provide district rangers the opportunity to manage tree density on individual sites and to improve the forest's resilience to drought, and insect and disease conditions."

The Silvicultural report (pg. 11) states mortality information related to insects, disease and wildfire. The Fuels report (pg. 7) states that during pile burning, understory burning and mechanical treatments, snags could be created with possibly 10 percent mortality of trees 20-inch dbh or larger. The Fuels report (pg. 16 and 18) lists tables with flame length and crown fire potential.

I find that the EA adequately analyzed the effects of tree mortality resulting from thinning and mortality resulting from fire.

Issue 11:

The EA does not adequately discuss the potential adverse impacts of the project on the black-backed woodpecker, which is the only MIS bellwether species for all wildlife species associated with snags in heavily burned forest (Appeal, pg. 6).

Response: The Eldorado National Forest LRPM, as amended by the 2007 Sierra Nevada Forests Management Indicator Species Amendment, states that "disclosure and analysis for covered projects is as follows: every project record shall contain a discussion of the effects of the alternatives on the MIS habitat(s) that will be directly affected by the Forest Service action" (Sierra Nevada Forests Management Indicator Species Amendment Record of Decision, pg. 14).

As shown in Table I of the Raintree MIS report, the black-backed woodpecker is the MIS for effects of land management activities upon medium and large snags in burned forest, and there is no such habitat in the project area (MIS Report, pp. 4-5). See also, responses to Issues 4 and 9 (above), and response to comment number 35 (EA, Appendix A, pp. 29-31).

I find that the EA, Appendix A (pp. 29-31), adequately discusses the potential adverse impacts of the project on the black-backed woodpecker habitat, and that the EA has met Forest Plan and NFMA obligations for management indicator species, including the black-backed woodpecker.

Issue 12:

The EA does not adequately analyze the fact that recent research reveals that California spotted owls preferentially select unlogged high-intensity fire patches for foraging, while selecting unburned or low-severity areas for roosting (Appeal, pp. 6-7).

Response: All Forest Service planned, funded, executed, or permitted programs and activities must be reviewed for possible effects on endangered, threatened, proposed, or sensitive species. The biological evaluation is the means of conducting the review and of documenting the findings (FSM 2672.4).

"While reducing fuel loadings within the proposed treatment areas is expected to reduce the likelihood of high severity wildfire effects within the treatment areas modeled under the 90th percentile weather conditions, as described in the Fuels Report (Fuels Report, pp. 15-16), it would not eliminate high severity wildfire or passive crown fire within areas that currently have heavy fuels in the untreated portions of the Project Area as well as across the broader landscape. By implementing a pattern of treatments in strategic locations across the project area, future wildfires would be expected to burn with a mixture of severities more similar to what would be expected in mid-elevation Sierran mixed conifer fire regimes without a history of fire suppression" (EA, Appendix A, pp. 31-32).

I find that the EA adequately considered spotted owl habitat requirements including nesting and foraging habitat in the analysis. In addition, the proposed action appropriately considered the potential risk of stand-replacing wildfire in the purpose and need, and project design, to protect habitat for the spotted owl and other old forest-associated species.

Issue 13:

The Forest uses the 2004 Framework forest plan, but courts have ruled this plan illegal. The project should be governed by the 2001 Framework (Appeal, pg. 7).

Response: There is no ruling that requires this project be governed by the 2001 Sierra Nevada Forest Plan Amendment (the "2001 Framework"). The 2004 Framework decision has not been vacated and there is no injunction against continuing to implement projects pursuant to the 2004 Framework decision. The federal court ruling in *Sierra Nevada Forest Protection Campaign v. Rey*, 573 F. Supp. 2d 1316 (E.D. Cal 2008) found that the Forest Service failed to consider a reasonable range of alternatives to the 2004 Framework as required by NEPA. The remedy phase for this ruling is currently before the District Court to determine the proper remedy. The latest ruling involving the 2004 Framework occurred in May 2011, *Sierra Forest Legacy et al v. Sherman*, 646 F.3d 1161 (9th Cir. 2011). In that decision, the 9th Circuit remanded the case to the District Court for further proceedings related to proper remedy for the Framework NEPA violation. Until the District Court rules again on remedy, Forest Service activities on the Eldorado continue to implement the 2004 Framework and are not constrained during the remand process.

I find that the EA properly used the 2004 Framework in their analyses of the Raintree Forest Health Project.

Issue 14:

The Forest did not analyze Rhodes and Baker (2008), which questions the basis for thinning and its assumed effectiveness (Appeal pp. 7-8).

Response: "Agencies shall insure the professional integrity, including scientific integrity of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement. Agencies may place discussions of methodology in an appendix" (40 CFR 1502.24).

The Forest responded to the analysis in Rhodes and Baker (2008) in Appendix A of the EA (pp. 8-11). The Forest collected site specific forestry data, analyzed it, and concluded that the proposed action of thinning would be the most effective way to realize the desired condition and meet the purpose and need of the project.

I find that the referenced publication characterized the probability of fire in thinned areas over time, and that the EA appropriately addressed the appellants concern about future thinning.

Issue 15:

The Forest does not adequately explain the ecological damage that they are trying to avoid by preventing patches of high-intensity fire, nor does it explain or divulge the damage to wildlife that would occur from preventing high-intensity fire patches (Appeal, pg. 8).

Response: "For an EA, NEPA requires that the environmental effects be briefly analyzed in sufficient detail so as to adequately determine whether there are significant issues that need to be examined in an Environmental Impact Statement (EIS)" (36 CFR 220.7[b][3]).

The Forest responded to this issue in Appendix A of the EA (pp. 10-11) stating that this project is consistent with national and regional direction and priorities and addresses the historical context of wildfire within the project area. The response also references other documents, such as the SNFPA, National Fire Plan and the Cohesive Strategy, which recognize the amount of severe wildfire as a national problem. See response to Issue 6 (above).

As discussed in previous responses, this project is not designed, nor expected to eliminate, high severity fire from the landscape surrounding the project. It is designed to reduce the amount of high severity fire patches within and adjacent to the project area. While high severity patches can provide habitat for species, creating these patches was not part of the purpose and need for the Raintree project. Since the project is not proposing to generate high severity patches, nor completely exclude them from the landscape, it was unnecessary for the Responsible Official to explain the effects of the project on these patches in the EA.

I find that the EA adequately analyzed the effects of a mosaic of fire intensities ranging from high to low in the EA. I find that the EA presented a thorough analysis of the fire return interval and fire regimes for this project.

Issue 16:

The Forest did not adequately analyze the impacts of thinning on the California spotted owl (Appeal, pp. 8-9).

Response: The direct, indirect, and cumulative effects of the project activities, including thinning, have been analyzed for the California spotted owl and its habitat (EA, pp. 33-35; Terrestrial Wildlife BE, pp. 23-27, 39-52, 64-65, 67, 69-70; MIS Report pp. 34-38). The Raintree project incorporated all applicable standards and guidelines (Eldorado National Forest LRPM, as amended by 2004 SNFPA).

No protected activity centers (PACs) will be mechanically treated in the Raintree Project (EA, p. 33). While there are treatments proposed in California spotted owl home range core areas (IIRCA) and suitable habitat, no changes in CWHR designations is expected to result from proposed thinning treatments (EA, p. 33; Wildlife BE, p. 45). In addition to the Terrestrial Wildlife BE, EA, and MIS Report, analysis of California spotted owl habitat can be found in the Raintree Project response to comments (EA, Appendix A, pp. 13-15).

Proposed management of California spotted owl habitat is consistent with findings from Blakesley, et al. (2005). Habitat quality within treatment units may be reduced from high to moderate; however, it would remain within a range that is used by California spotted owls (Terrestrial Wildlife BE, pp. 45-48; EA, Appendix A, pg. 15). Trees greater than 29.9 inches (76cm) are not designated for cutting in this project and few trees greater than 20-inch dbh would be removed from 3,406 acres of natural stands (Silviculture Report, p. 12; EA, Appendix A, pg. 15).

I find that the California spotted owl analysis of direct, indirect, and cumulative effects conducted for the Raintree Project was performed at an appropriate scale, level and detail, in consideration of recent scientific findings regarding California spotted owl habitat requirements and use, including studies conducted by Blakesley, et al (2005), and others.

Issue 17:

The Forest fails to analyze impacts on the Pacific fisher that are being caused by their removal of mature trees instead of turning them into snags or downed logs (Appeal, pp. 9-10).

Response: "All Forest Service planned, funded, executed, or permitted programs and activities must be reviewed for possible effects on endangered, threatened, proposed, or sensitive species" (FSM 2672.4).

The direct, indirect, and cumulative effects to the fisher were analyzed in detail in the terrestrial Wildlife BE (pp. 39-43 and 55-58) and summarized in the EA (pg. 36).

Although the fisher is believed to no longer exist in the Eldorado National Forest (EA, pg. 36), suitable habitat was identified within the project area and effects of the project to fisher were considered. Many design criteria identified for the Raintree Project will result in the retention of habitat features found to be important to fisher.

I find that the EA and analysis of the impacts of the Raintree Project on fisher was done at an appropriate scale, level and detail, including potential impacts to large trees, snags, and downed wood.

Issue 18:

The EA implies, incorrectly, that high-intensity fire is unnatural and wholly harmful in mixed conifer forests of the Sierra Nevada (Appeal, pg. 10).

Response: The Forest responded to this issue in Appendix A of the EA (pp. 10-11) stating that this project is consistent with national and regional direction and priorities and addresses the historical context of wildfire within the project area and references other documents, such as the SNFPA, National Fire Plan and the Cohesive Strategy, that recognize the amount of severe wildfire is a national problem. See responses to Issues 6 and 15 (above).

Additionally, the Forest responded, on page 18 in Appendix A of the EA, that "there is no conclusion in the project record that suggests wildland fire is an ecological threat." The Forest also notes that, "the Forest Service policy on fire suppression is outside of the scope of this project" (EA, Appendix A, pg. 18).

I find that the EA adequately analyzed the effects of a mosaic of fire severities ranging from high to low. I also find that the EA presented a thorough analysis of the fire return interval and fire regimes for this project.

Issue 19:

The EA suggests that stands were much less dense historically in the Project area. Please explain the scientific basis for assuming that basal area density was higher historically in the Project area than it is now, in light of Bouldin (1999) (Appeal, pg. 11).

Response: "For an EA, NEPA requires that the environmental effects be briefly analyzed in sufficient detail so as to adequately determine whether there are significant issues that need to be examined in an Environmental Impact Statement (EIS)" (36 CFR 220.7[b][3]).

As described in the EA (pg. 7) and supported by conclusions presented in Bouldin, 1999:

"Historically, at the lowest elevations or higher up on the drier south or west aspects and ridges within the project area, fires were generally frequent, ranging from fire return intervals of 5 to 15 years, with individual sites sometimes burning two years in succession. With this type of fire frequency, the fire intensity and severity were

most likely low because of lack of time to accumulate very much fuel between fires. Fire suppression, starting in the early 1900s has changed these historic fire intervals, resulting in a change in species composition, structure, and density.”

More importantly, for purposes of the Raintree Project, the Forest focuses on current conditions and how to move towards the desired conditions established in the Sierra Nevada Forest Plan Amendment (“2004 Framework”) (EA, pg. 24 and Appendix A, pp. 18-19).

I find that the EA adequately analyzed the effects of stand density on each alternative and appropriately discussed historic conditions, current conditions, and how to move towards established desired conditions.

Issue 20:

The Forest did not include a cost estimate for a 30”-limit mechanical thin (Appeal, pg. 11).

Response: The Forest completed an economic viability analysis for the project that is summarized in the EA (pp. 31-32). The analysis includes cost estimates for timber receipts, sale prep, administration, and piling and burning cost.

I find that the EA completed an economic analysis for this project, and appropriately addressed the appellant’s concerns about cost estimates for mechanical thinning.

Issue 21:

The EA fails to explain why it is necessary to remove many mature fire-resistant trees up to 30 inches in diameter for fire/fuels management (Appeal, pp. 11-12).

Response: “Agencies shall insure the professional integrity, including scientific integrity of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement. Agencies may place discussions of methodology in an appendix” (40 CFR 1502.24).

Response to comments in Appendix A of the EA (pp. 20-22) addresses, in detail, the necessity to remove trees up to 30 inches dbh. Some of these reasons include restoration treatments:

- (1) in order to promote growth and reduce drought stress to assure that forests are more resilient to fire, insect outbreaks and future climate change, removal of large trees might be necessary;
- (2) to reduce the threat of crown fire spread and initiation the reduction of canopy bulk density (Stephens and Moghaddas, 2005; Safford et al., 2009) and the decrease of intermediate sized ladder fuels (North, et al. 2009) may warrant large tree removal;
- (3) to reintroduce stand heterogeneity by decreasing tree densities by appropriate amounts depending on slope location (North et al. 2009) and enhance gap phase regeneration of more shade intolerant species

(Bonnicksen and Stone 1982); and, (4) as large diameter trees increase long term carbon sequestration, competition may have to be decreased in overly dense stands (Hurteau and North 2010). (EA, Appendix A, pp. 20-22)

I find that the EA analyzed and stated multiple reasons for the inclusion of trees up to 30 inches dbh.

Issue 22:

The EA's section on climate change is not credible or accurate (Appeal, pg. 12).

Response: "For an EA, NEPA requires that the environmental effects be briefly analyzed in sufficient detail so as to adequately determine whether there are significant issues that need to be examined in an EIS" (36 CFR 220.7[b][3]).

The Forest Service guidance document, Climate Change Considerations in Project Level NEPA Analysis January 13, 2009, states:

"It is not currently feasible to quantify the indirect effects of individual or multiple projects on global climate change and therefore determining significant effects of those projects or project alternatives on global climate change cannot be made at any scale."

The EA and Climate Change report address general qualitative effects on climate change by alternative (EA, pp. 61-62; Silviculture Report, Appendix H, pp. 1-4). These documents describe the relative potential of the alternatives to affect or influence climate change and include relevant scientific references.

I find that the EA adequately analyzed the project's potential effect on climate change processes for the purposes of this project.

FINDINGS

Clarity of the Decision and Rationale -- The Forest Supervisor's decision and supporting rationale are clearly presented in the Decision Notice. Her reasons for selecting Alternative 1, are logical and responsive and consistent with direction contained in the Eldorado National Forest Land and Resource Management Plan as amended by the Sierra Nevada Forest Plan Amendment Record of Decision (February, 2004).

Comprehension of the Benefits and Purpose of the Proposal -- The purpose of the proposal as stated above is clear and the benefits are displayed. The purpose and need of the proposed treatment activities in the Raintree project area is to modify the forest vegetation in order to put it on a trajectory toward the desired conditions for: (1) reduced tree density; (2) sustained old forest conditions; (3) enhanced wildlife habitat; (4) reduced wildfire risk; (5) improved long-term scenic sustainability; (6) increased recreational opportunities; (7) enhanced riparian conservation areas; and, (8) maximized revenue derived from

commercial products to perform essential and costly biomass removal and surface fuel treatments.

The project considered the impacts on the human environment and consistency with the Forest Plan. The analysis clearly shows that the project provides increased protection of the environment and meets the purpose and need when compared to taking no action. I believe the environmental analysis in the EA adequately discloses the likely environmental impacts of the project. The adverse impacts predicted will be relatively minor and short-term; whereas the beneficial effects will be realized into the long-term.

Effectiveness of Public Participation Activities and Use of Comments -- Public participation was adequate and well documented. The project was added to the quarterly Schedule of Proposed Actions. The Forest mailed scoping letters, hosted public meetings, and distributed draft and final EAs to interested groups and individuals. The Eldorado National Forest has maintained current information on planning and activities on its web page. Responses to the comments received are detailed and included in the project record. The decision of the Forest Supervisor indicates she considered and responded to public input.

RECOMMENDATION

My review was conducted pursuant to and in accordance with 36 CFR 215.19 to ensure the analysis and decision is in compliance with applicable laws, regulations, policy, and orders. I reviewed the appeal record, including the comments received during the comment period and how the Forest Supervisor used this information, the appellant's objections and recommended changes.

Based on my review of the record, I recommend that the Forest Supervisor's decision be affirmed on all issues. I recommend that the Appellants' requested relief be denied on all issues.

/s/ Nancy J. Gibson

Nancy J. Gibson
Appeal Reviewing Officer
Forest Supervisor, Lake Tahoe Basin Management Unit

Sierra Nevada Conservancy

2013 Proposition 84 Grant Program

Performance Measures Narrative

Acres Land Improved/Restored: The project will improve 9,144 acres of wildlife habitat and reduce the risk of catastrophic wildfires. The project is located in an area classified as moderate to very high hazard and low to extreme fire risk as determined by the ENF Fire Hazard Map (Eldorado National Forest Landscape Analysis, 1996).

people reached: ENF has field site meetings to go over the project in detail. At the Watershed Education Summit teachers and students will be active participants in monitoring the project and will learn the importance of the project.

\$ value resources leveraged: The cost of biomass removal in tons is \$27.64, for the treatment of 51,000 green tons the cost is \$1,409,640. The biomass product value per green ton is \$26.00 at 51,000 green tons the project will generate \$1,326,000 in timber sales to offset the project. The monitoring component will be conducted by Forest Service personnel and through the Watershed Education Summit, resulting in in-kind and volunteer hours.

and type of jobs created: Stewardship contracting will be used. Offerors who submit the greatest number of local hires closest to the work site will be given a higher rating. This includes primary contractors and subcontractors.

An estimated 75 year-round jobs and 75 year-round indirect full time jobs will be generated based on harvesting 15,000,000 board ft. 20 full time and indirect jobs will be generated from other project tasks.

of new, improved, or preserved economic activities: Each million board ft harvested supports the equivalent of five year-round jobs in the local logging and sawmill industries, enhancing the local forest industry. Indirect employment is estimated at five jobs per million board ft harvested. Indirect jobs result from the employment created by the local purchase of materials for sawmills, local expenditures by workers, and expenditures by local government employees. About ¾ of these indirect jobs would be in the trade and service sectors.

Tons of Carbon Sequestered/Emissions Avoided: Fuel reduction treatments will result in more manageable wildfires; associated smoke will be less intense and will produce lower amounts of CO₂, greenhouse gasses, and particulate emissions in shorter durations. The combination of reduced fuels and higher residual tree survival will also reduce the release of greenhouse gasses and CO₂ as well as preserve greater amounts of carbon sequestration in the surviving trees. Examining four of the largest wildfires in the US in 2002, for forest land that experienced catastrophic stand-replacing fire, prior thinning will have reduced CO₂ release from live tree biomass by as much as 98%.¹

¹ *Mixed-Conifer Understory Response to Climate Change, Nitrogen, and Fire.* Global Change Biology (2008) 14, 1543-1552. Matthew Hurteau and Malcolm North.

Sierra Nevada Conservancy
2013 Proposition 84 Grant Program

Regulatory Requirements/ Permits

No permits are required for this project.

Sierra Nevada Conservancy
2013 Proposition 84 Grant Program

Project Title: Rain Tree Forest Health Project

Project Category: 1 (Site Improvement and Restoration)

Project Budget: \$250,000.00

1. Detailed Project Description Narrative

a. Project Description

The Raintree Forest Health Project is located on the Placerville Ranger District on the Eldorado National Forest located south of Highway 50, and south of the Mormon emigrant Trail Road, including the general area between Capps Crossing and Leek Springs Lookout in El Dorado County, California.

The Raintree Healthy Forest Project proposes restorative and preventative treatments and management actions in order to improve forest health and re-establish a sustainable landscape condition on public lands with the Raintree project area. Project activities include activities to reduce fuel loads and fire hazards, and to improve wildlife habitat, watershed condition, and forest growth, while considering effects on other resources and activities. Proposed activities would include commercial and pre-commercial understory thinning of mixed conifer stands and plantations, enhancing aspen and hardwood habitat, removing hazard trees adjacent to system roads and dispersed camping areas, reconstructing and repairing system roads, grapple and machine piling, mastication brush and small trees, restoring watershed function, and prescribed understory burning.

The purpose and need of the proposed treatment activities in the Raintree project area is to modify the forest vegetation in order to put it on a trajectory toward the desired conditions for: (1) reduce tree density; (2) sustained old forest conditions; (3) enhanced wildlife habitat; (4) reduced wildfire risk; (5) improved long-term scenic sustainability; (6) increased recreational opportunities; (7) enhanced riparian conservation areas; and (8) maximized revenue derived from commercial products to perform essential and costly biomass removal and surface fuel treatments.

The project is needed to: (1) improve the forest health across the Raintree project area; (2) reduce the fuel loading to reduce the threat of wild fire; (3) maintain and enhance the existing old

growth conifers, aspen and oak components; (4) maintain and enhance recreational opportunities; (5) treat hazardous fuels in a cost-effective manner to maximize treatment acres under a limited budget while fulfilling the role the Forest Service has in providing a wood supply for local manufacturers; (6) provide a maintainable level of forest access while closing unneeded roads and motorized trails to enhance wildlife habitat and reduce wildlife harassment; (7) enhance and maintain Strategically Placed Area fuels Treatments (SPLATS) designed to slow the spread of wildfire; and (8) enhance soil productivity within plantations by increasing soil cover. Additionally, there is a need to improve watershed condition and related ecosystem services by improving the conditions of several streams and riparian zones in the project area. Improvements include: maintaining and restoring the geomorphologic and biological characteristics of special aquatic features within the riparian zones, streams, including in stream flows, and hydrological connectivity both within and between watersheds to provide for the habitat needs of aquatic species.

Forest Treatments

Biomass material (non-sawtimber material such as limbs, tops, and pieces less than 6 inches and 10 feet long) removed from treatment units and accumulated at landings would be disposed of by pile burning, commercial and personal firewood use, or chipped and removed to co-generation plants. 140 acres are proposed to be treated under this proposal.

Prescribed burning activities including pile burning and understory burning will be conducted on 80 acres. The prescribed understory burn area would account for excluded areas such as roads, cultural resource sites, rocky outcrops, areas void of vegetation and other sensitive areas. The prescribed understory burning would occur in all natural stands, plantations, and areas not treated. Activities would include construction of firelines by hand or tractor, and hand cutting ladder fuels (trees less than 8.9 inches dbh) around large old growth conifers, oak trees, and aspen aggregations. Fire line construction would follow established guidelines for waterbar construction as outlined in the Best Management Practices. Upon completion of prescribed burning activities, the visible character of the firelines would be hidden by spreading woody debris where they intersect existing roads and trails to limit unauthorized vehicle use. Prescribed burning activities would not be conducted in plantations 619-12, 619-36, 619-39, 619-76, and 623-62. The project will recruit snags and down logs by leaving individual trees or patches of tree mortality caused by prescribed understory burning activities, unless they pose a hazard to the public, woods workers, and Forest Service employees.

Forest Stand Maintenance

Enhance and maintain Montane hardwood ecosystems on 18 acres dominated by California black oak, and canyon live oak by removing competing conifers from the understory and within 30 feet of the perimeter of existing oak trees to create openings to stimulate natural regeneration.

Enhance, maintain, and expand existing quaking aspen aggregations on 18 acres within the project area by removing competing conifers and within 30 feet of the perimeter of these aspen aggregations. These aspen aggregations are best described as riparian aspen.

Conduct reforestation activities on approximately 18 acres in newly created gaps by planting white pine blister rust resistant sugar pine and Jeffrey pine with planting in clusters or groups with varying spacing between groups outside the dripline of legacy leave trees.

Forest Management

Enhance and restore watershed conditions by decommissioning approximately 1.0 miles of system road. Decommissioning will be accomplished through subsoiling roadbed, removing culverts, re-contouring roadbed, and hiding with woody debris.

Reconstruct approximately 1.0 miles of system roads. Reconstruction and repair activities will involve the replacement of inadequate drainage crossings, elimination of ruts, ditch repair, installation of waterbars and dips with inadequate water runoff control, gate installation to control seasonal use or replacement of existing non-functional gates or barricades, and removal of brush and small trees encroaching on roads.

Rehabilitate and restore dispersed recreation areas impacted by motor vehicle use by installing approximately 565 barrier rocks to limit access in the vicinity of Meiss Road and adjacent to North Fork Cosumnes River. Road and four existing dispersed parking areas adjacent to Meiss Road will be restored by installing rock barriers and reshaping native surface parking areas.

Large woody debris, such as root wads and trees will be placed in stream channels deficient of LWD to provide habitat for aquatic species, enhance geomorphic and biological characteristics of streams as well as associated riparian habitat. Trees will be felled into deficient stream channels to promote the natural progression of geomorphic and biological characteristics by impounding sediment, stabilizing stream banks, and facilitating the development of pools/riffle habitat.

Known noxious weed occurrences on 36 acres within the project area include rush skeleton weed and cheat grass and will be treated by hand pulling. Post-treatment monitoring of sensitive plants, noxious weed, and special habitat within the project area will be conducted following project implementation to ensure that the design criteria are effective.

Monitoring and Education

The Watershed Education Summit is a service learning project designed to promote education through the collaboration between environmental agencies and local high schools in El Dorado County and the Tahoe region. Over the course of five days, professional foresters, wildlife biologists, state water quality resource specialists, Resource Conservation District personnel, teachers and students work together collecting physical and biological data on the Cosumnes River, culminating in valuable data used by our local U.S. Forest Service to assess the Raintree project. 2013 represented the 15th anniversary of the WES program.

b. Workplan and Schedule Narrative

SNC PROJECT DELIVERABLES AND SCHEDULE

DETAILED PROJECT DELIVERABLES	TIMELINE
<p>Forest Treatments:</p> <p>White Fir Treatment/Biomass Removal: 140 acres at \$95.00 per acre. Create gaps with legacy leave trees to decrease infection of <i>H. annosum</i> “S” type.</p> <p>Prescribed Understory Burning: 60 acres at \$250.00 per acre.</p> <p>Hand Pile Burning: 20 acres at \$200.00 per acre.</p> <p>Planting (includes cost of trees, planting, grubbing): 60 acres at \$730 per acre.</p> <p>Total Acres: 280</p> <p>Budget: \$85,250.00</p>	<p>6/2014 - 3/2017</p>
<p>Forest Treatments:</p> <p>Quaking Aspen, Montane Hardwood, and Blister Rust Treatment: enhance, maintain and expand existing quaking aspen aggregations and Montane hardwood ecosystems by removing competing conifers. Plant white pine blister rust resistant Sugar Pine and Jeffrey Pine. 18 acres at \$730.00 per acre.</p> <p>Budget: \$13,000.00</p>	<p>6/2014 - 3/2017</p>
<p>Road Decommissioning:</p> <p>Decommission approximately 1.0 miles of system road by subsoiling roadbed, removing culverts, re-contouring roadbed, and hiding with large woody debris.</p> <p>Budget: \$19,000.00</p>	<p>6/2014 - 3/2017</p>
<p>Rehabilitate Dispersed Recreation:</p> <p>Restore areas impacted by motor vehicle use by installing 565 barrier rocks to limit access. 565 barriers at \$50.00 per barrier.</p> <p>Budget: \$28,250.00</p>	<p>6/2014 - 3/2017</p>
<p>Large Woody Debris:</p>	<p>6/2014 - 3/2017</p>

Place root wads and trees in deficient stream channels. 36 pieces at \$50.00 per piece. Budget: \$18,000.00	
Noxious Weed Eradication: 36 acres at \$250.00 per acre. Budget: \$9,000.00	6/2014 - 3/2017
Monitoring: Watershed Education Summit (WES). Six High Schools participate each year to collect watershed data to evaluate restoration objectives and overall watershed health. Four years of data collected. Budget: \$36,000.00	6/2014 - 3/2017
Six Month Progress Reports	12/2014, 6/2015, 12/2015, 6/2016, 12/2016,
Final Report	2/2017
Project End Date	3/2017

c. Restrictions, Technical/ Environmental Documents and Agreements

There has been widespread interest in applying new forest practices based on concepts presented in U.S. Forest Service General Technical Report PSW-GTR-220, "An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests." This collection of papers (PSW-GTR-237) summarizes the state of the science in some topics relevant to this forest management approach, presents case studies of collaborative planning efforts and field implementation of these new practices, and clarifies some of the concepts presented in GTR 220. It also describes a method for assessing forest heterogeneity at the stand level using the Forest Vegetation Simulator and a new geographic information system tool for project level planning that classifies a landscape into different topographic categories. While this collection of papers presents information and applications relevant to implementation, it does not offer standards and prescriptions. Forest management should be flexible to adapt to local forest conditions and stakeholder interests. This report does, however, strive to clarify concepts and present examples that

may improve communication with stakeholders and help build common ground for collaborative forest management.

Eight alternatives were considered, as described in the Decision Notice and Finding of No Significant Impact (December 2011), of which five were analyzed in detail in the Environmental Assessment (March 2011). All activities will be implemented in compliance with the Eldorado national Forest Land and Resource Management Plan (USDA Forest Service 1989) as amended by the 2004 Sierra Nevada Forest Plan Amendment (USDA Forest Service 2004), the Sierra Nevada forests Management Indicator Species Amendment environmental Impact Statement and Record of Decision (USDA Forest Service 2007) and the Eldorado National Forest Public Wheeled Motorized Travel Management Environmental impact Statement and Record of Decision (USDA Forest Service 2009).

The El Dorado County has completed CEQA compliance under a Mitigated Negative Declaration SCH# 2012012021. Received: 1/11/12, Start Review: 1/11/12, End Review: 2/9/12.

NEPA was completed by the Eldorado National Forest (ENF), USFS on December 8, 2011. A Decision Notice and a Finding of No Significant Impact was filed as a result of the Environmental Assessment completed December 5, 2011.

There are no property restrictions and/or encumbrances that could adversely impact project completion.

d. Organizational Capacity.

Established in 1940, the El Dorado County Resource Conservation District is a local, independent, non-enforcement, non-regulatory, self-governed special district organized under Division 9 of the Public Resources Code. The RCD has the institutional capabilities to administer the project and to ensure project performance measures and deliverables are met. The District has administered several federal, state and local agreements within scope, budget and has provided all deliverables with the scheduled timeframe for each agreement.

The District will act as administrative agency to ensure project components adhere to the term of the agreement. The Eldorado National forest shall oversee all aspects of project implementation, compliance with all federal, state, and local rules and regulations, and compile all technical reports to be included in the administrative reports.

The Eldorado National Forest has been a leader in Stewardship Fuels Reduction Projects in the Nation, since the stewardship authority was enacted in 2004. Stewardship activities include sawtimber thinning, ladder fuel removal, surface fuel piling,

mastication, ecological restoration activities, and road repairs. Since 2004, the Eldorado NF has treated 53, 873 acres. This includes 26,860 acres of thinning (local contractors) and 25,839 acres of prescribed burning (Forest Service work).

Forest Service staff overseeing and administrating tasks in the work plan include: Silviculturist, Contract administrators, hydrologist, wildlife and aquatic biologist, recreation officers, archaeologists, and fuels officers.

Contractors performing tasks would include local loggers and contractors who have a solid background to complete work according to contract specifications and requirements.

In addition, the Watershed Education Summit has been in place since 1998 and has successfully implemented its monitoring program each year providing valuable information to the USFS in evaluating the effectiveness of treatment while providing a place-based educational experience to students from every high school in El Dorado County.

e. Cooperation and Community Support

The Raintree Restoration Project employs a robust community outreach and collaborative approach to building a proposed action which is consistent with SNCs' Sierra Nevada Forest Communities Initiative (SNFCI). Collaboration resulted in the formulation of new ideas and capturing the issues, concerns and opportunities provided during collaborative process. A series of meetings were held, including visits to the project area to begin fostering partnerships and development of the project framework. Collaborators included representatives from the Sierra Forest Legacy, El Dorado Fire safe Counsel, California Forestry Association, Resource Conservation Districts, Trout Unlimited (El Dorado Chapter), El Dorado County Board of Supervisors, and the Pacific Southwest Research Station. Project principles employ a Best Science approach to ecological restoration. The recommendations and guidance described in the recent General Technical Reports 220/237, "An Ecosystem Management Strategy for Sierran Mixed Conifer Forests" is being applied to the Raintree project.

The El Dorado County Resource Conservation District was identified as the lead agency to prepare the project as a tier 1 level project and has been adopted in the Cosumnes, American, Bear, and Yuba (CABY) Integrated Regional Water Management Plan (IRWMP). CABY is a collaborative planning effort that adopted an IRWMP in December 2006, in response to the passage of Proposition 50. Diverse stakeholder involvement was a priority from the beginning, and CABY comprises more than 30 organizations, representing water supply, conservation, recreation, agriculture, and community interests, as well as federal and local governments.

In 2009, the project was also adopted by the South Fork American River Watershed Group (SFARWG) and included in the South Fork American River Watershed Management Plan. The SFARWG represents a wide variety of interests including private landowners, government agencies, and non-profit organizations. This round-table offers a means for all interested citizens to express their concerns for natural resources of the watershed and to provide input into watershed planning.

The Raintree project utilizes a multi-party monitoring program called the Watershed Education Summit (WES). High School students from 6 local High Schools conduct watershed monitoring activities during a week-long event. For the past 15 years, representatives from the USFS, RCD, NRCS, CALFIRE, Trout Unlimited and AmeriCorps have collected data used to evaluate forest management practices and their associated effects on forest and aquatic habitats.

Links:

<http://vimeo.com/10737256>

<http://www.watershedsummit.org/>

<http://4swep.org/tahoe-basin-watershed-education-summit/>

Additional partnerships include:

Georgetown Divide Resource Conservation District

USFS – Eldorado National Forest

El Dorado Union High School District

Oak Ridge High School

Golden Sierra High School

Ponderosa High School

Union Mine High School

El Dorado High School

Tahoe Resource Conservation District

USFS Tahoe National Forest

Natural Resources Conservation Service

CALFIRE

AmeriCorps

f. Long-Term Management and Sustainability

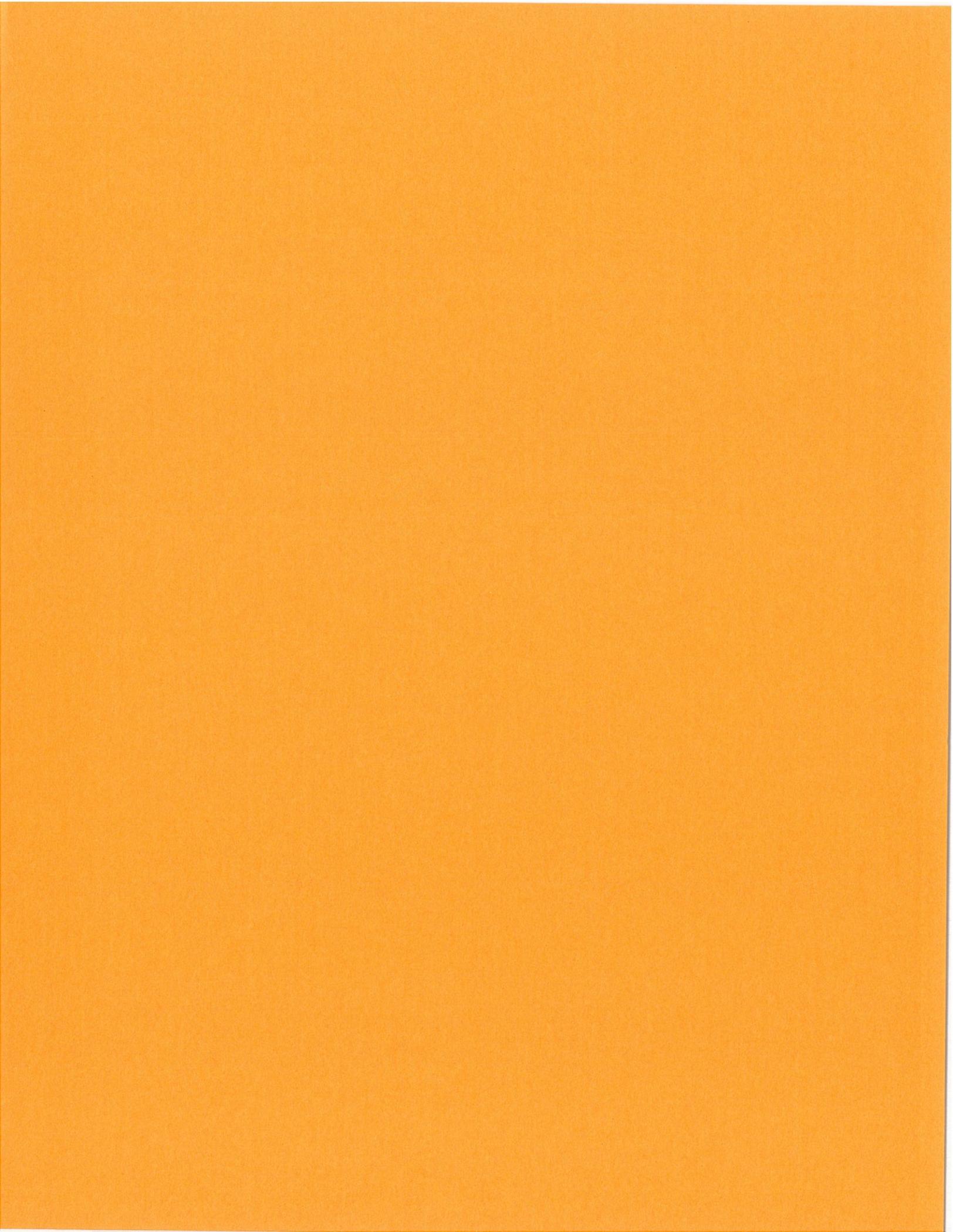
The Raintree Forest Health Environmental Assessment is tiered to the Eldorado National Forest Land and Resource Management plan as amended by the Sierra Nevada Forest plan Amendment (2004), the Environmental Impact Statement for the LRMP, the Sierra Nevada Forest Management Indicator Species Amendment.

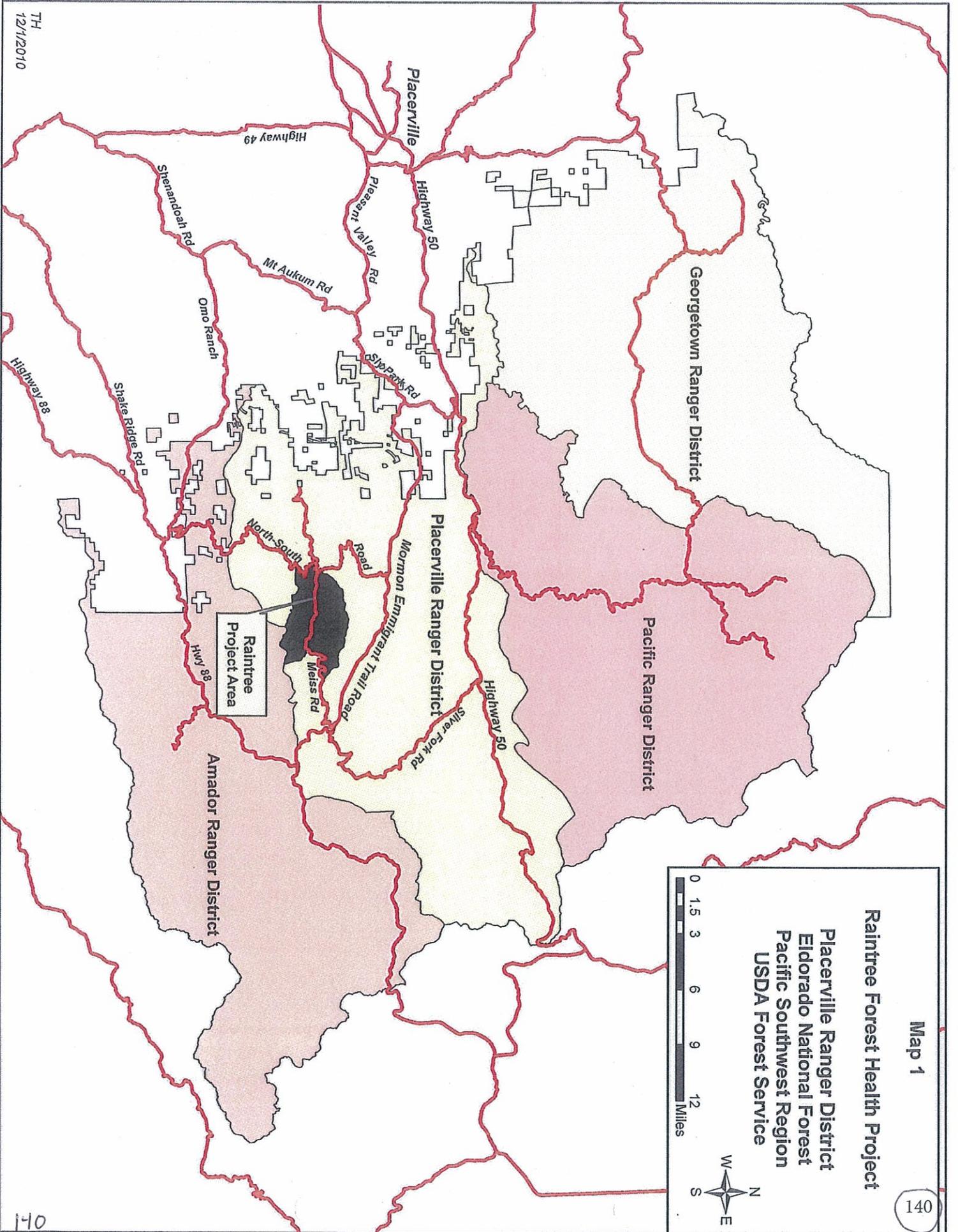
Marking guidelines and silviculture prescriptions on the Raintree project utilized concepts outlined in GTR-220, An ecosystem management strategy for Sierran mixed-conifer forests, to place the landscape on a trajectory to achieve the desired future condition as specified in the ENF LRMP as amended by the 2004 Sierra Nevada Forest Plan Amendment.

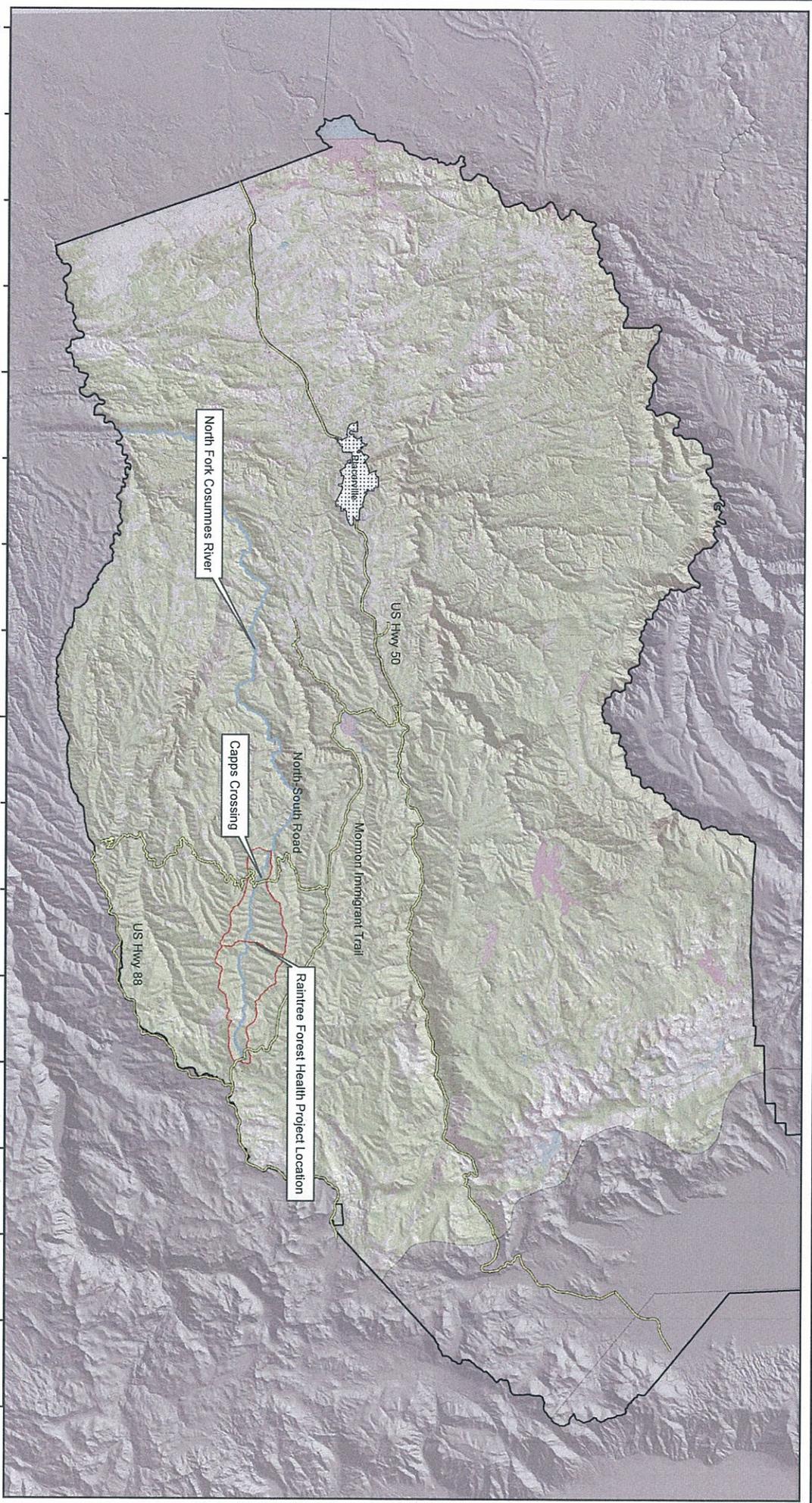
The Eldorado National Forest has desired future conditions by land allocation for the lands proposed for treatment. Appropriate management intents and objectives are identified to accomplish the desired conditions and long-term sustainability of the project. The long term management of the project is further described in the Environmental Assessment.

Sierra Nevada mixed-conifer forests could benefit from a new management strategy that goes beyond short-term fuel treatment objectives and incorporates long-term ecological restoration and habitat improvement into forestry practices. This strategy is compatible with current landscape fuel treatments (i.e., SPLATs, DFPZs, and WUI defense zones), but strives to incorporate ecological restoration and wildlife habitat needs that have not been explicitly addressed. This strategy can be implemented using a multiage silvicultural system to meet fuel reduction, ecosystem restoration, and wildlife habitat objectives.

The saw-timber that would be made available would also contribute substantially to the important role the Forest Service has in providing a wood supply for local manufacturers. This is very important to the long-term viability of the fuels program to support the local milling infrastructure. The local mills represent significant financial assets to the forest in the sense that their presence generates an economic demand for the large supply of excess trees that need to be removed to meet fuel treatment objectives.







Raintree Forest Health Project
Location Map
 El Dorado County, California

- Project Watershed Boundary
- County
- Cities - Placerville, CA
- North Fork Cosumnes River

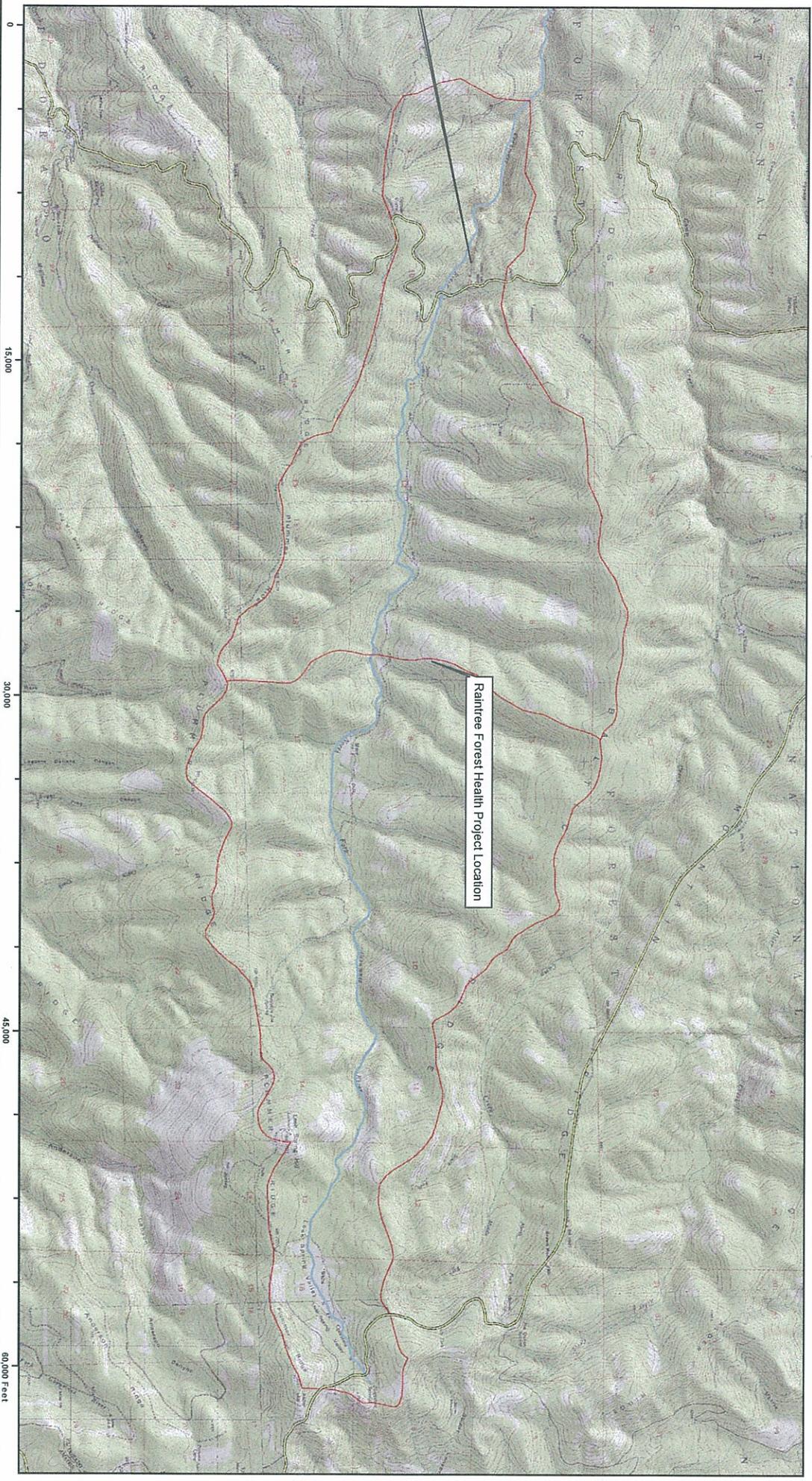
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The Resource Conservation Districts (RCD) make no representations or warranties regarding the accuracy of data or maps. The RCD shall not be liable under any circumstances for any direct, special, incidental, or consequential damages with respect to any user or third party on account of or arising from the use of data or maps.

El Dorado County & Georgetown Divide Resource Conservation Districts

Created by: **Matt Egbert**
 Date: **September 15, 2013**
 Contact: **100 Forni Road, Placerville CA (530) 295-5630**



Raintree Forest Health Project
 USGS Topographic Map
 El Dorado County, California

Project Watershed Boundary
 Other - Riparian, CA
 North Fork Cosumnes River

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El Dorado County

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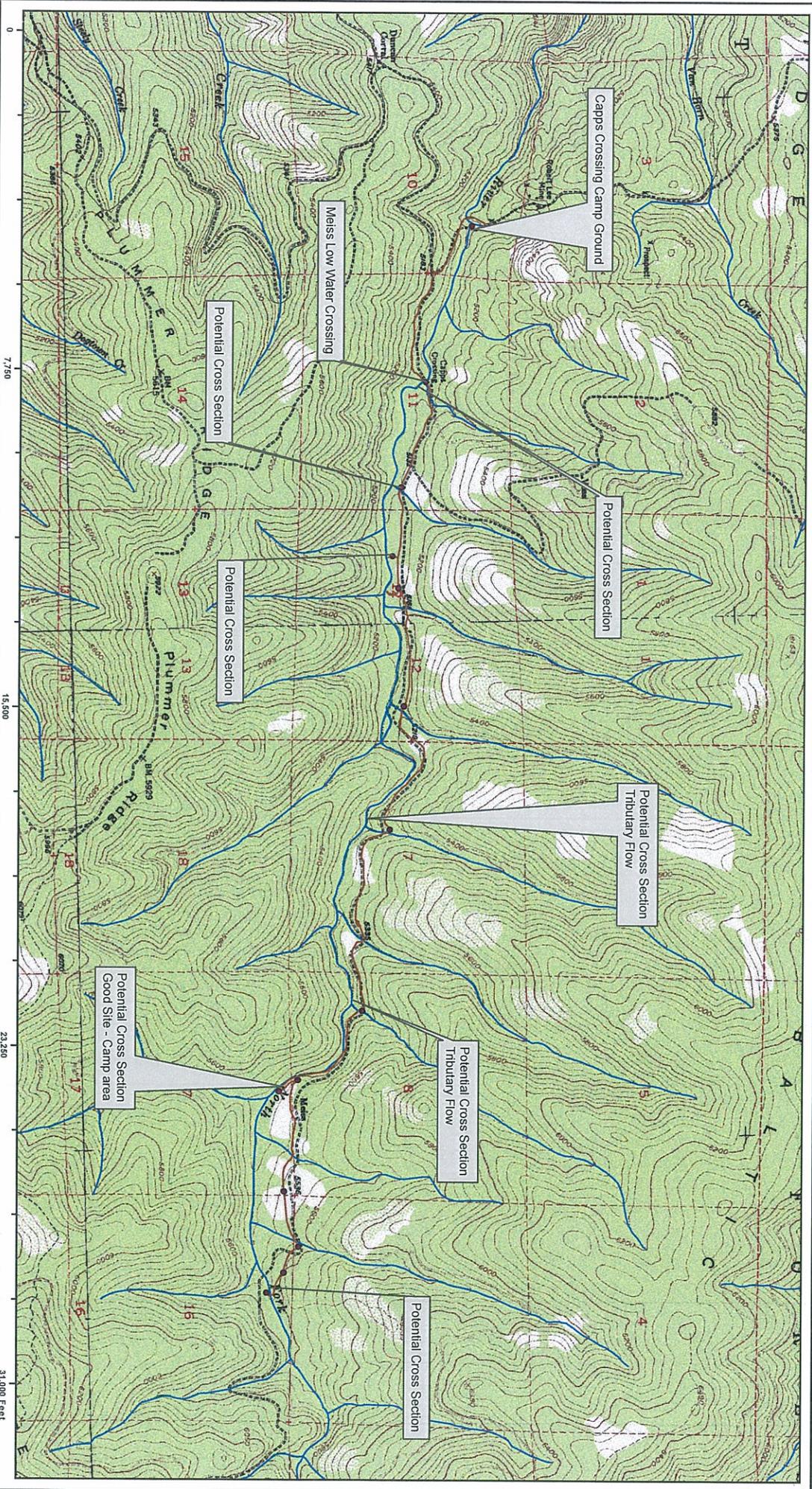


El Dorado County & Georgetown District Resource Conservation Districts

Created by: Mark Ebbert

Date: September 15, 2013

Contact: 100 Forni Road, Placerville CA (530) 295-5650



**Watershed Education Summit
2011**

- Main Road
- County Roads
- Waterways

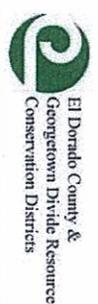
Photographed By:
National Agricultural Imaging Program (NAIP)
2005



El Dorado County

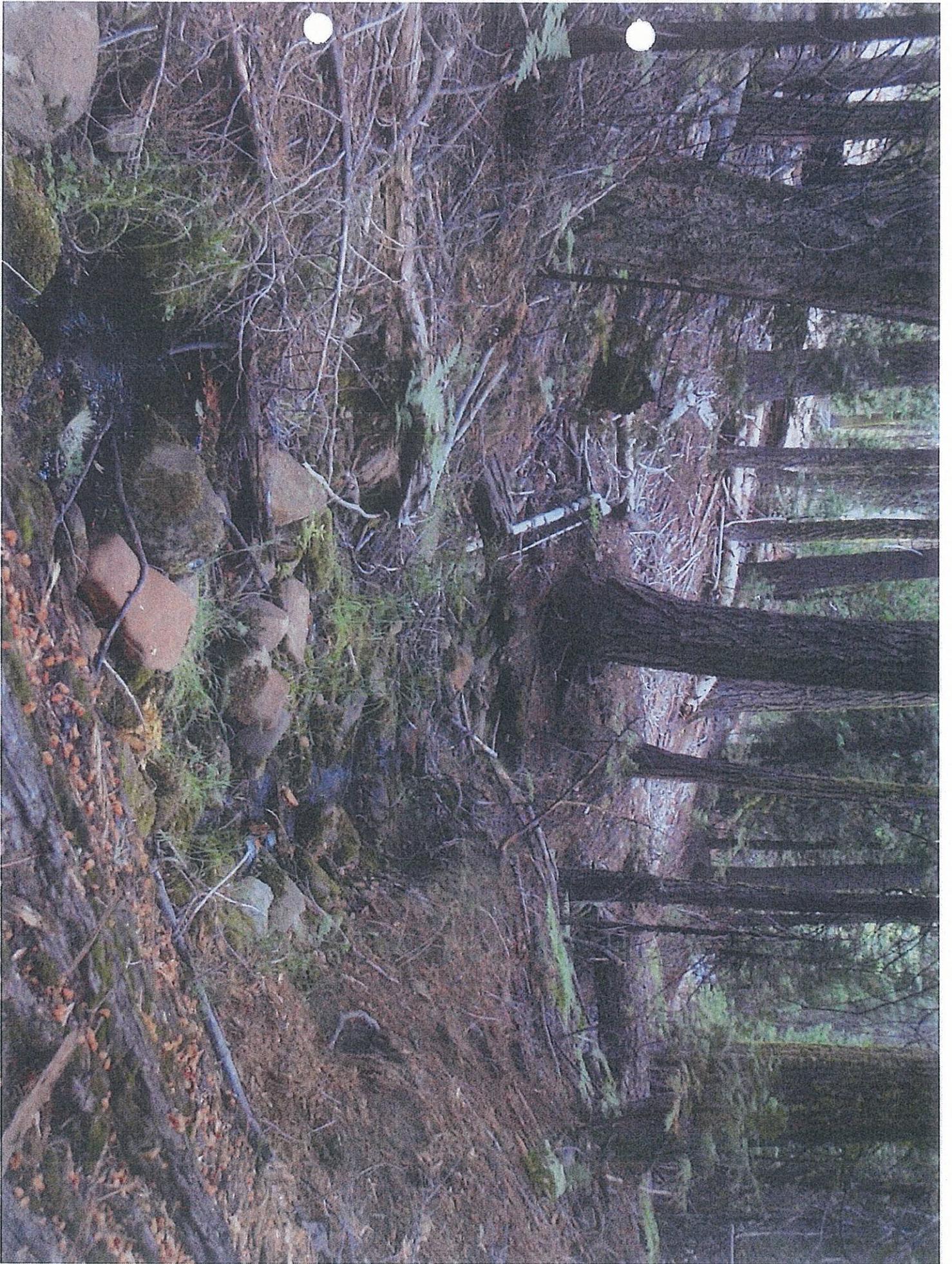


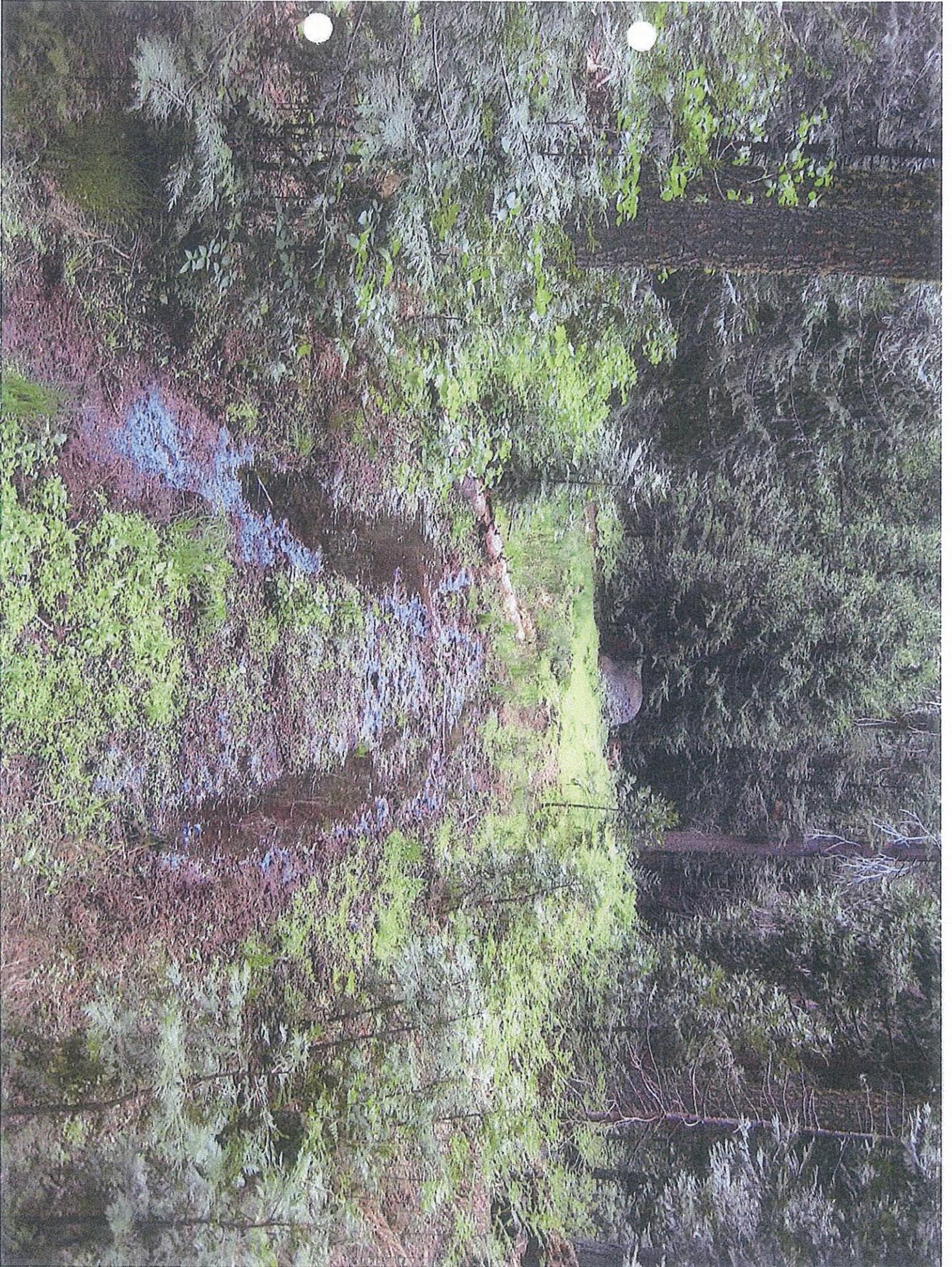
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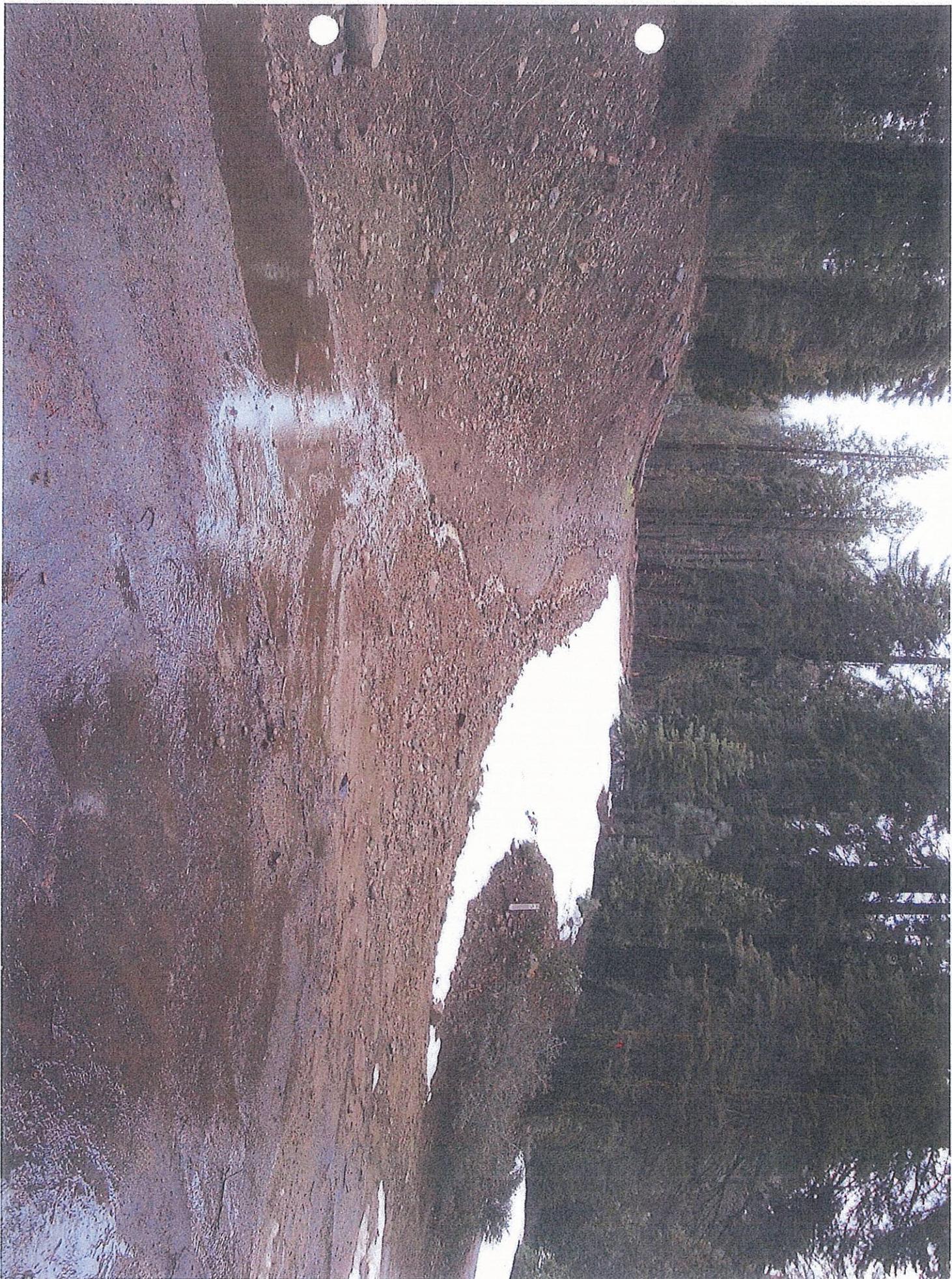


Created by: Mark Egbert
Date: August 25, 2011
Contact: 100 Form Road, Placerville, CA (930) 285-5830













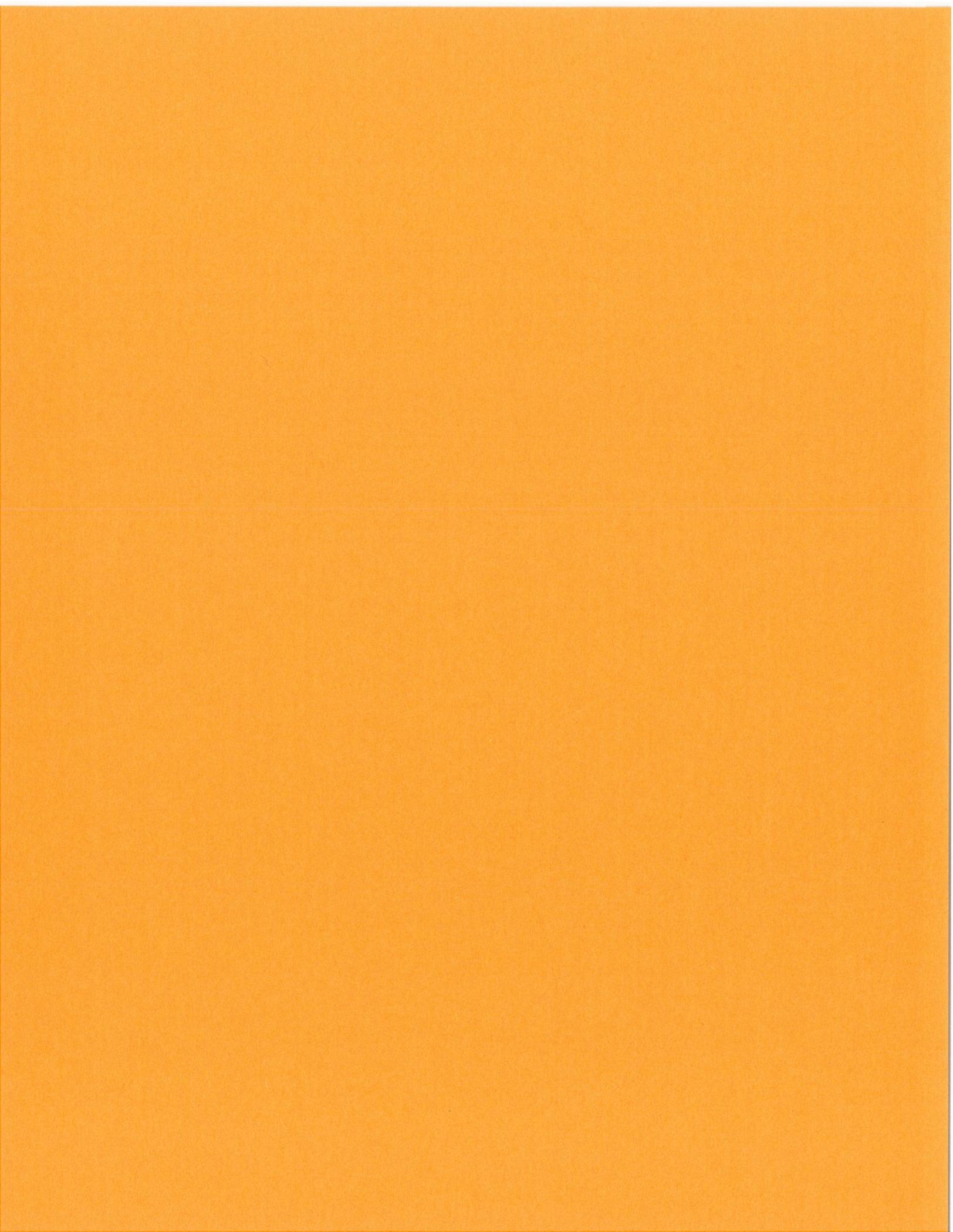




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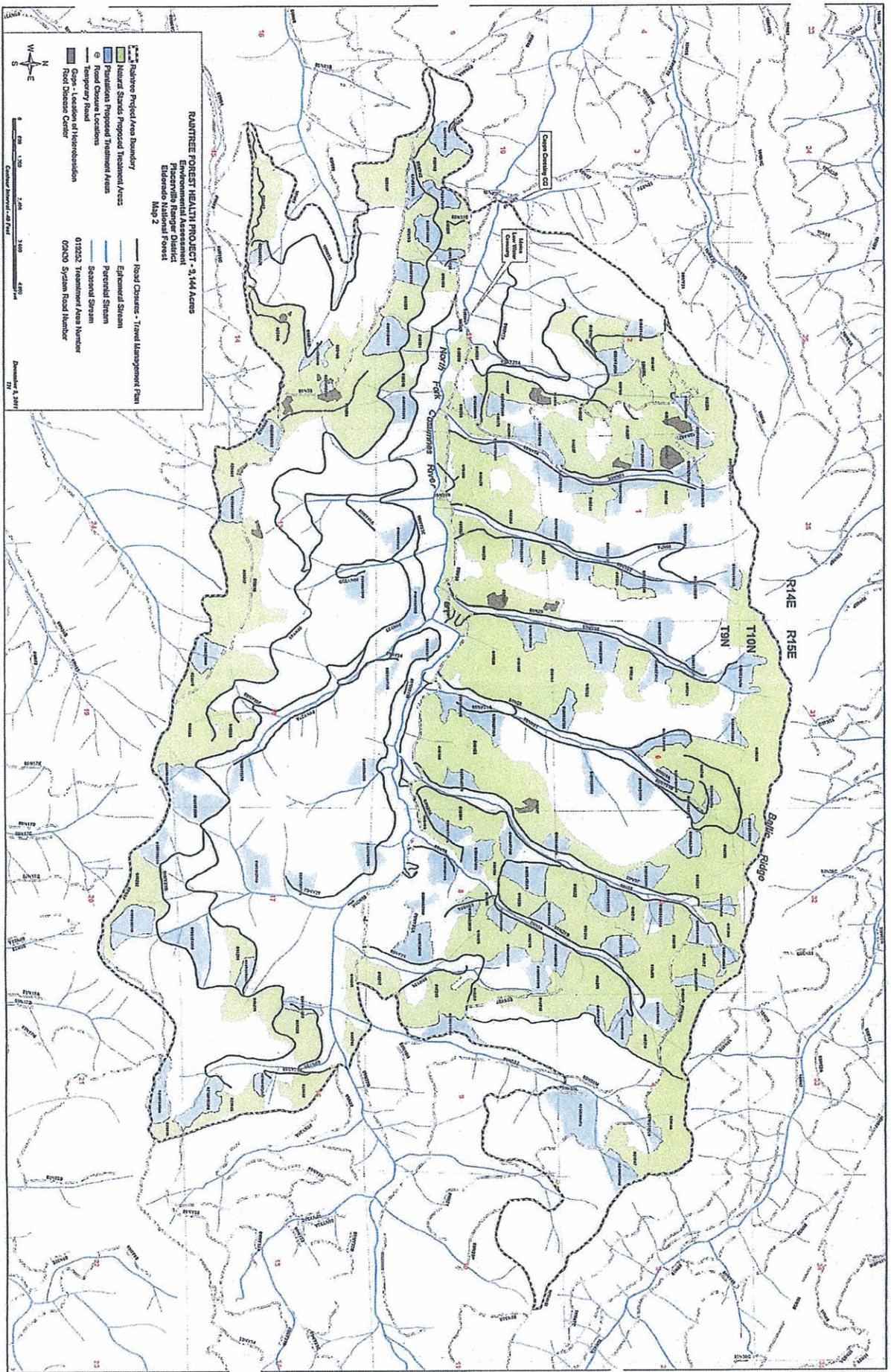


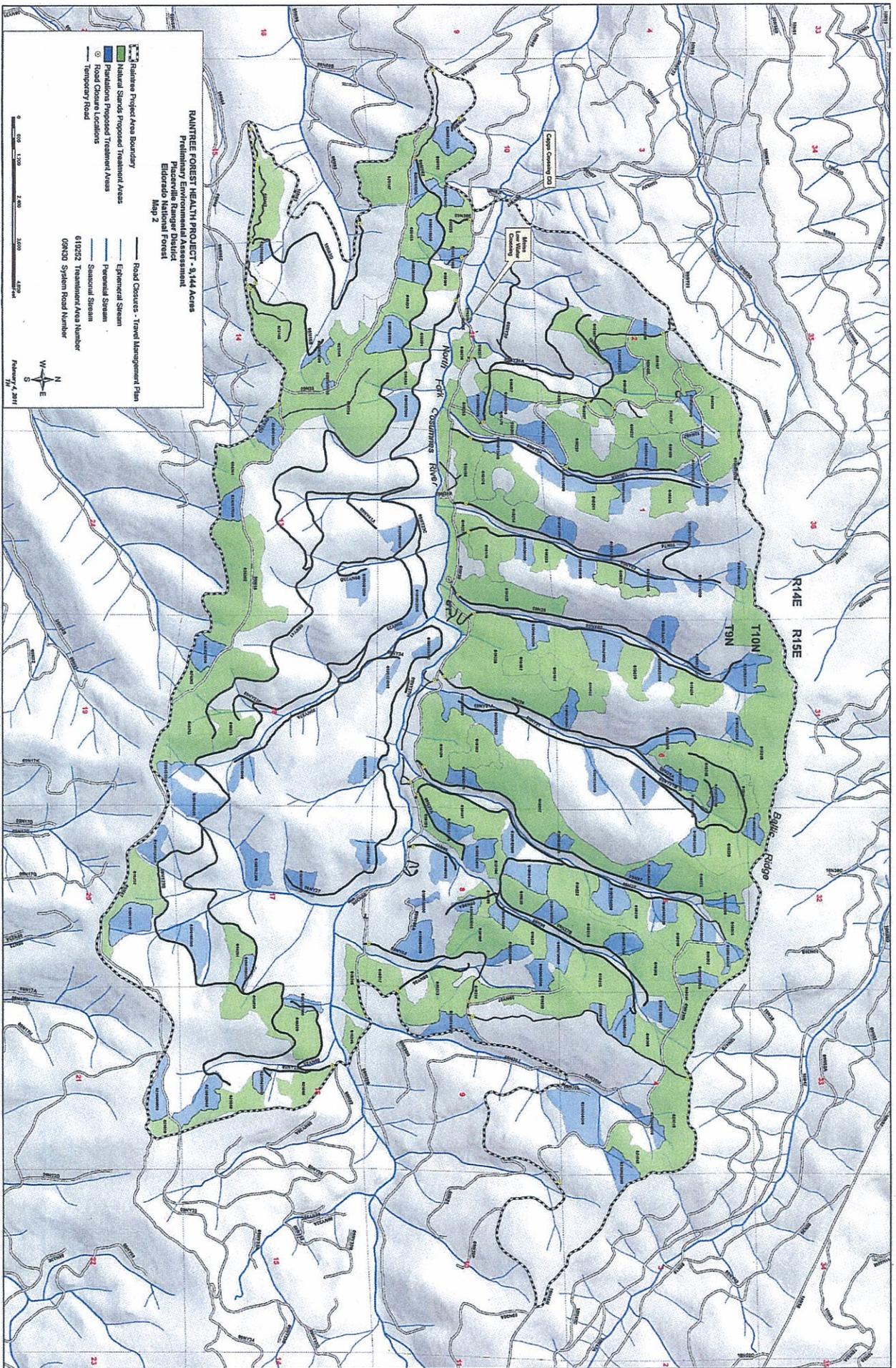




Sierra Nevada Conservancy
2013 Proposition 84 Grant Program

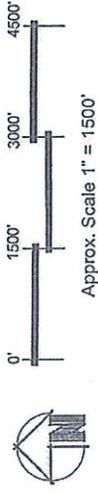
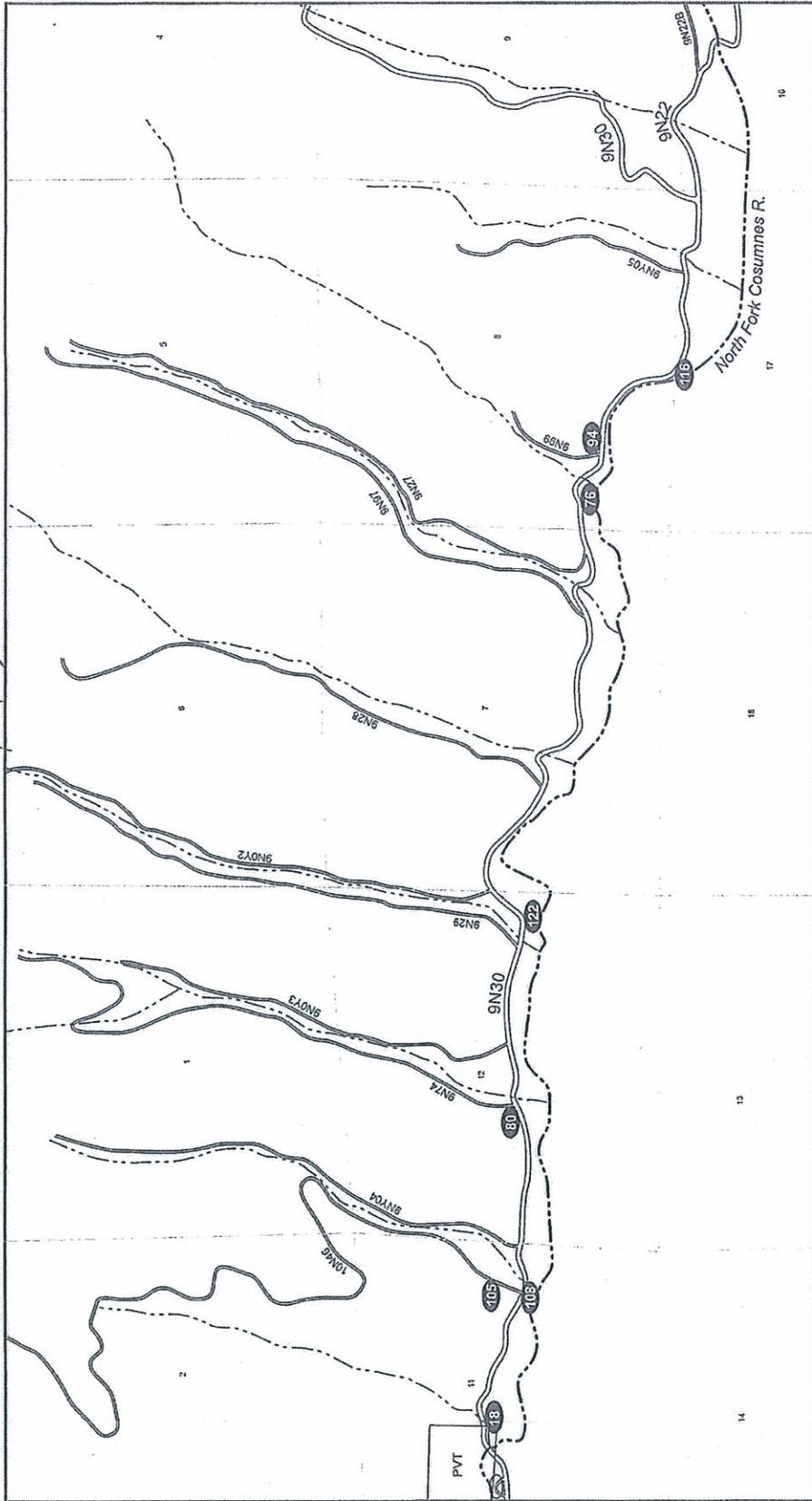
Site Plan





Raintree FHP
 Meiss Area Dispersed Camping Areas

Pg. 1 of 3
 Map 3

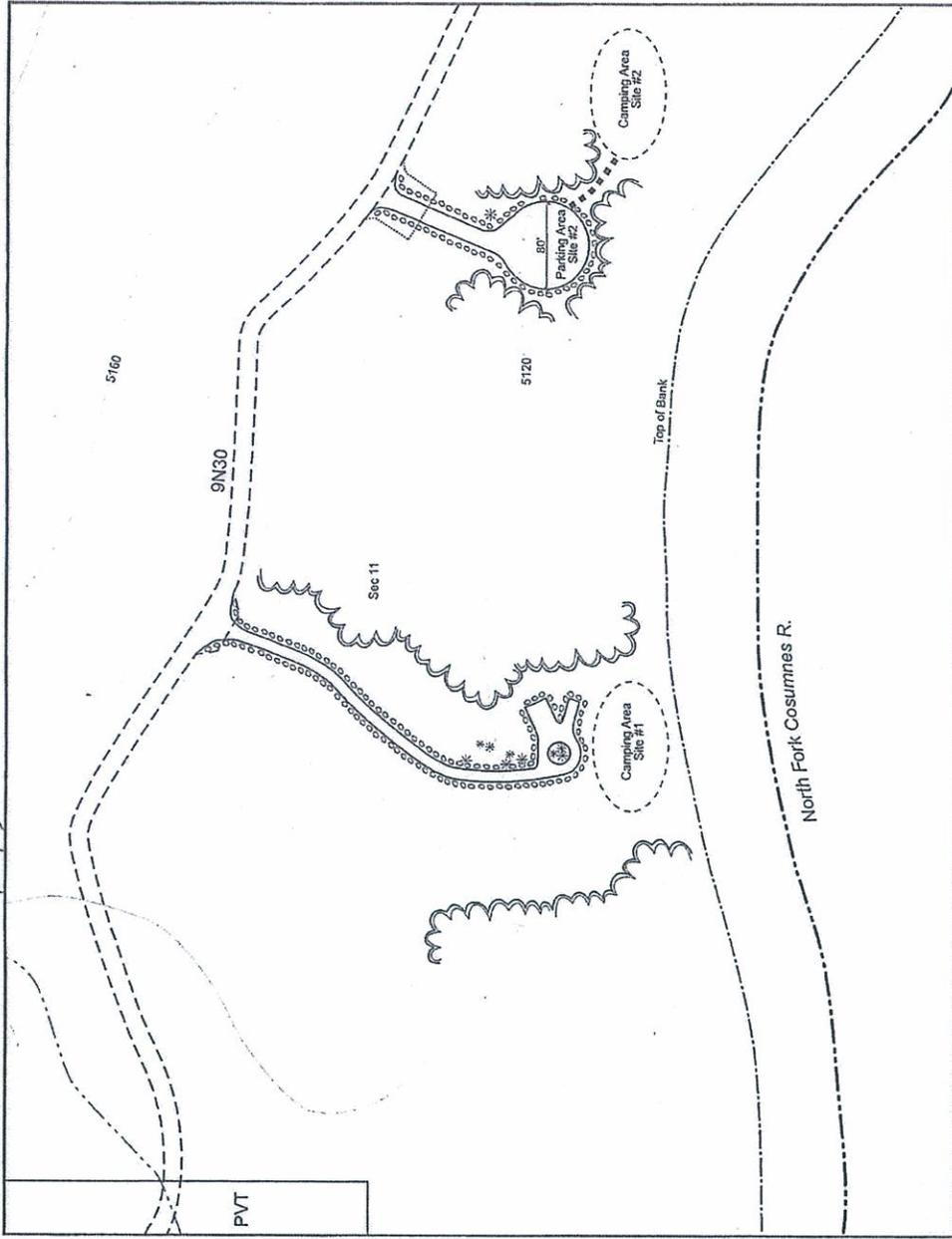


80 Stockpiled barrier rocks ± 5% (number of rocks noted)

Raintree FHP Meiss Area Dispersed Camping Areas

Pg. 3 of 3

Map 3



Camping Area #1

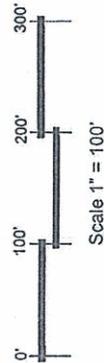
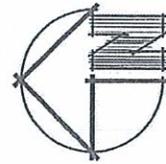
Road length = approx. 450'
 Road width = 14'
 Camp spurs = (3) @10' X 35' each
 Barrier rocks needed to line both sides of the proposed road and around parking spurs = approx. 111
 Aggregate base - if needed = approx. 91 C.Y. or 168 Tons

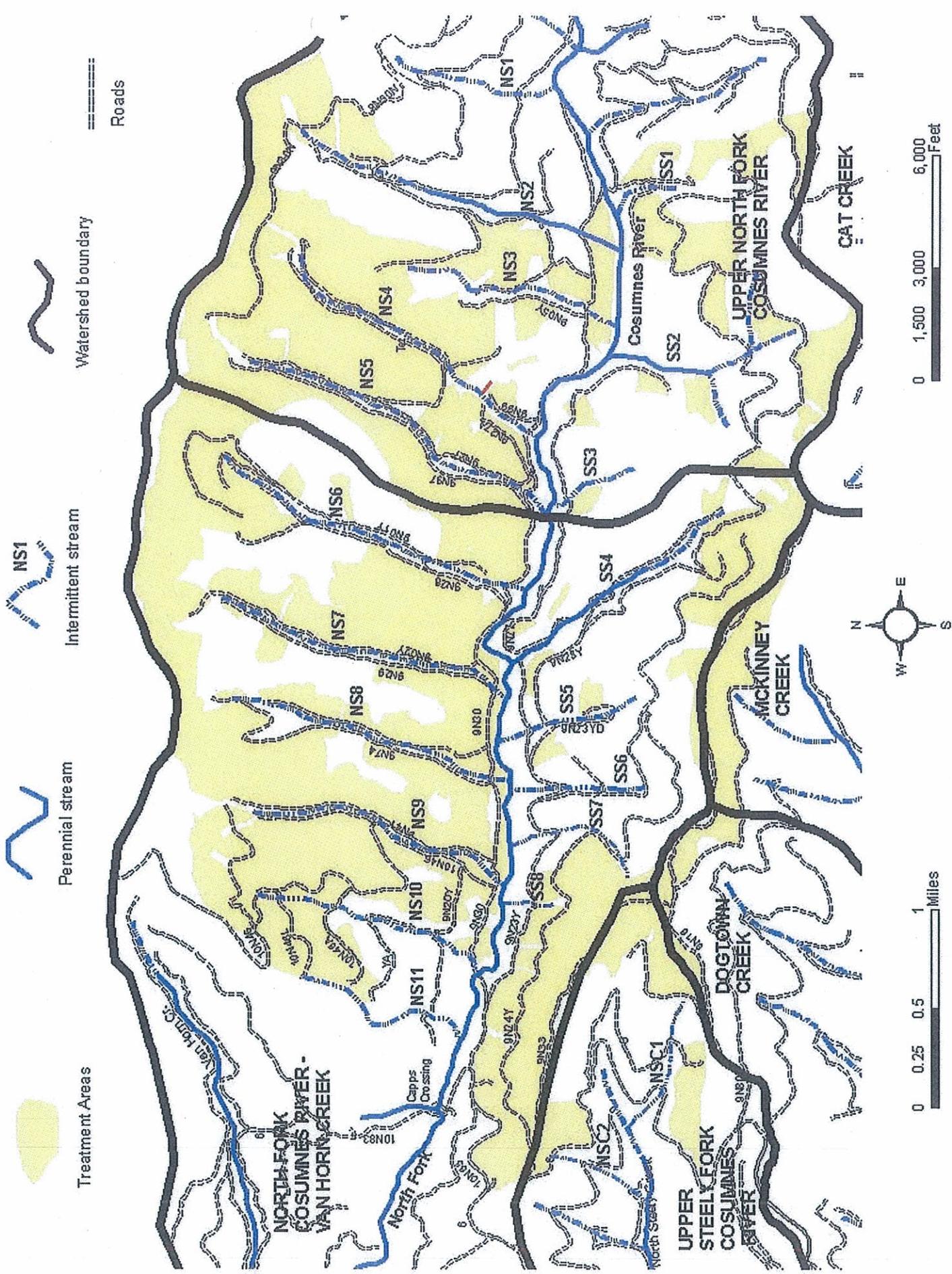
Camping Area #2

Road length = approx. 120'
 Road width = 14'
 Parking area = 40' radius circle
 Barrier rocks needed to line both sides of the proposed road and around parking spurs = approx. 54
 Aggregate base - if needed = approx. 83 C.Y. or 154 Tons

Remainder of Improvements (pg. 2)

New road length = approx. 150'
 Road width = 14'
 Exist. intersection improvement = 50' X 10'
 Parking areas/camp spurs (left to right pg. 2):
 (2) 10' X 35'
 (1) 40' X 25'
 (1) 20' X 25'
 (1) 30' X 25'
 Barrier rocks needed = 422
 Aggregate base - if needed = approx. 67 C.Y. or 124 Tons





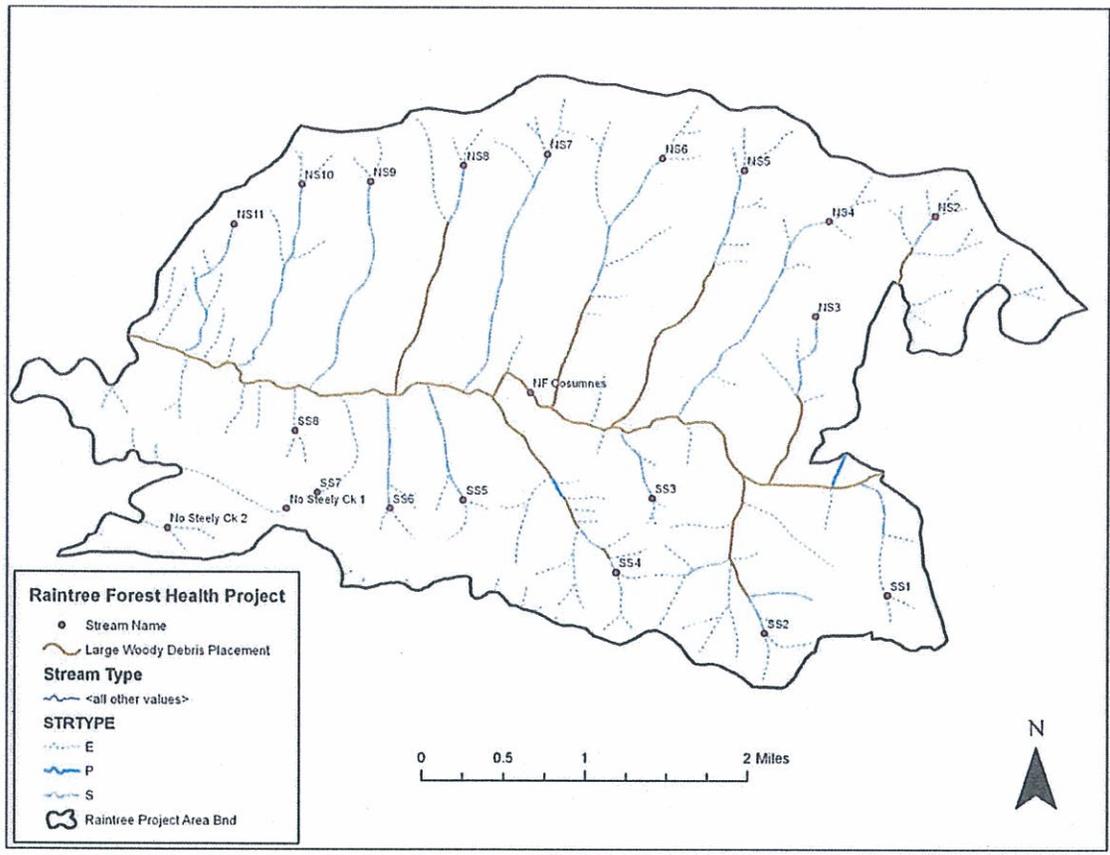
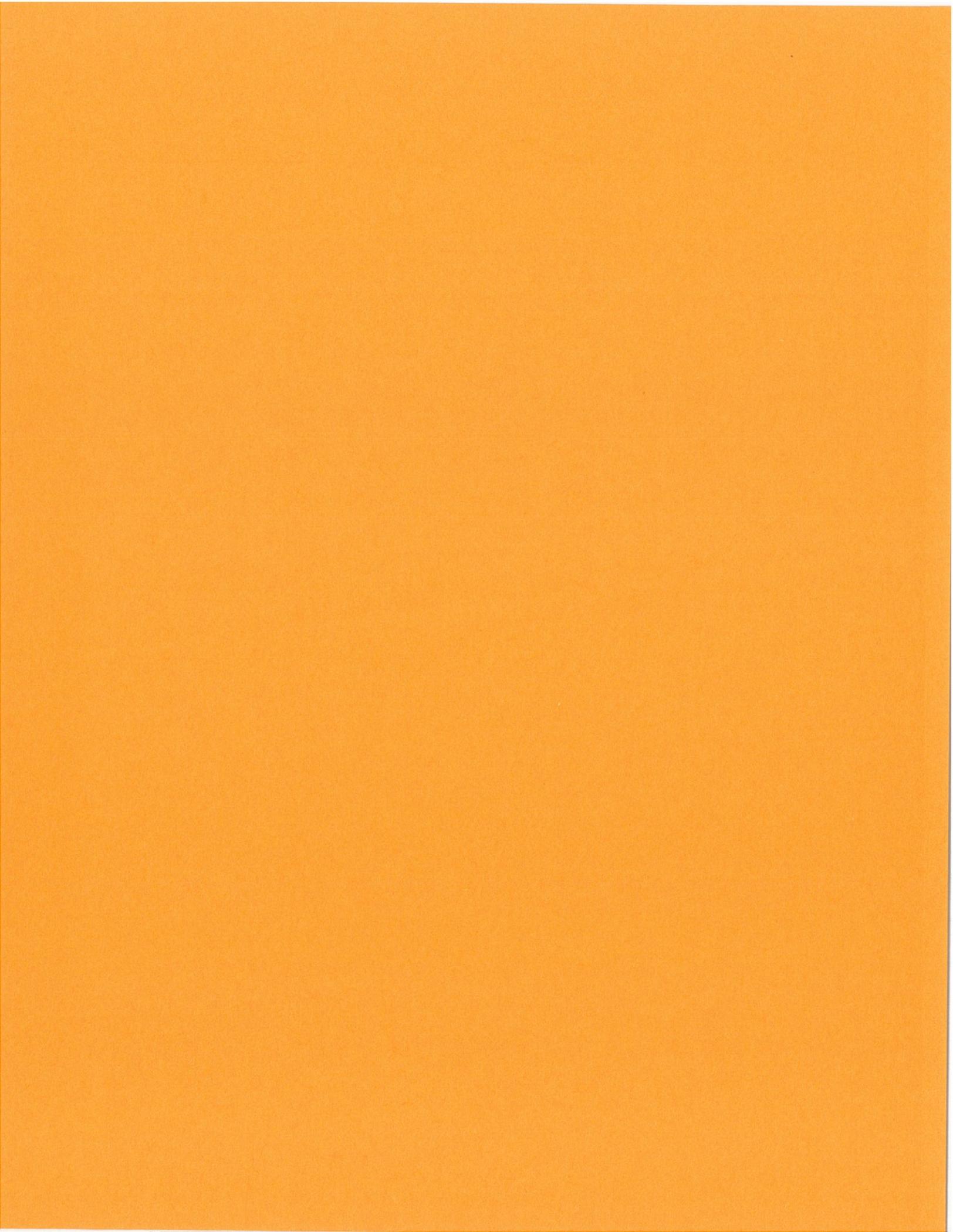


Figure 3. Raintree Forest Health Project area illustrating placement of Large Woody Debris in deficient stream channels.



**SIERRA NEVADA CONSERVANCY
PROPOSITION 84 - DETAILED BUDGET FORM**

Project Name: Raintree Forest Health Project

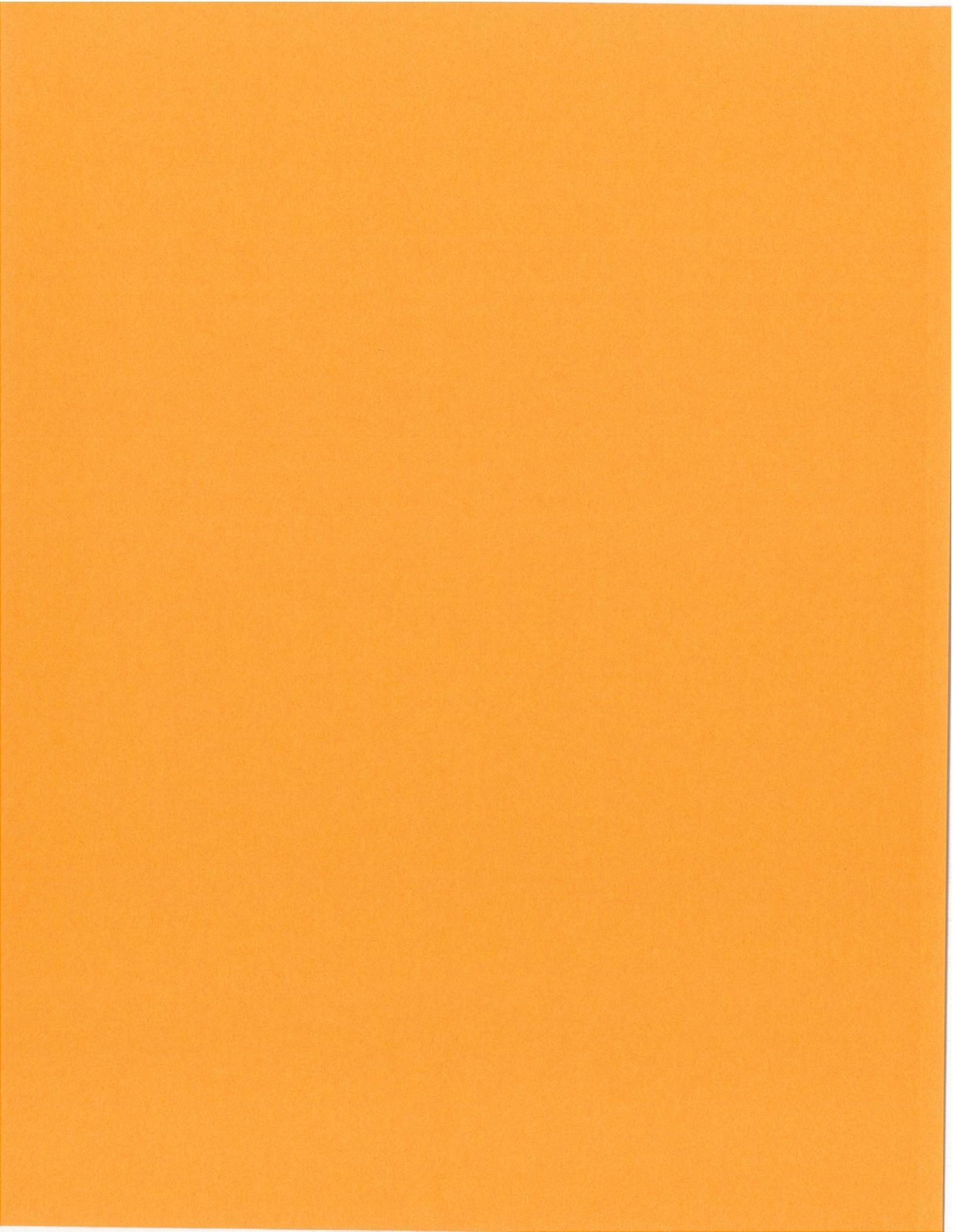
Applicant: El Dorado County Resource Conservation District

SECTION ONE DIRECT COSTS	Year One	Year Two	Year Three	Year Four	Year Five	Total
Project Management Costs	\$12,500.00	\$11,500.00	\$11,000.00	\$2,500.00	\$0.00	\$37,500.00
Forest Treatments:						
Biomass Removal (140 ac @ \$95/ac)/ Prescribed Burning (60 ac @ \$250/ac, 20 ac @ \$200/ac/ Planting and Grubbing (60 ac @ \$730/ac).	\$27,500.00	\$27,000.00	\$24,000.00	\$0.00	\$0.00	\$85,250.00
Aspen & Montane Hardwood Enhancements (18 ac @ \$730/ ac)	\$5,000.00	\$4,000.00	\$4,000.00	\$0.00	\$0.00	\$13,000.00
Road Decommissioning (1 mile @ \$19,000)	\$7,950.00	\$6,500.00	\$5,550.00	\$0.00	\$0.00	\$19,000.00
Rehabilitate Dispersed Recreation/Restoration (565 barriers @ \$50/ barrier)	\$12,500.00	\$12,500.00	\$10,000.00	\$0.00	\$0.00	\$28,250.00
Large Woody Debris (36 pieces @ \$50/ piece)	\$12,000.00	\$6,000.00	\$0.00	\$0.00	\$0.00	\$18,000.00
ous Weed Eradication (36 ac @ \$250/ ac)	\$4,000.00	\$3,000.00	\$1,000.00	\$0.00	\$0.00	\$9,000.00
DIRECT COSTS SUBTOTAL:	\$81,450.00	\$70,500.00	\$55,550.00	\$2,500.00	\$0.00	\$210,000.00

SECTION TWO INDIRECT COSTS	Year One	Year Two	Year Three	Year Four	Year Five	Total
Monitoring	\$10,000.00	\$6,000.00	\$4,000.00	\$0.00	\$0.00	\$20,000.00
Project materials, supplies, equipment	\$6,000.00	\$5,000.00	\$5,000.00	\$0.00	\$0.00	\$16,000.00
Publications, Printing, Public Relations	\$1,000.00	\$2,000.00	\$1,000.00	\$0.00	\$0.00	\$4,000.00
INDIRECT COSTS SUBTOTAL:	\$17,000.00	\$13,000.00	\$10,000.00	\$0.00	\$0.00	\$40,000.00
PROJECT TOTAL:	\$98,450.00	\$83,500.00	\$65,550.00	\$2,500.00	\$0.00	\$250,000.00

SECTION THREE Administrative Costs (Costs may not to exceed 15% of total Project Cost) :						Total
*Organization operating/overhead costs	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ADMINISTRATIVE TOTAL:	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SNC TOTAL GRANT REQUEST:	\$98,450.00	\$83,500.00	\$65,550.00	\$2,500.00	\$0.00	\$250,000.00

SECTION FOUR OTHER PROJECT CONTRIBUTIONS	Year One	Year Two	Year Three	Year Four	Year Five	Total
List other funding or in-kind contributors to project						
USDA-Eldorado National Forest	\$27,648.00	\$27,648.00	\$27,649.00	\$27,649.00	\$0.00	\$110,594.00
Biomass Product Value	\$247,424.00	\$247,424.00	\$247,424.00	\$247,422.00	\$0.00	\$989,694.00
El Dorado Union High School District	\$8,000.00	\$8,000.00	\$8,000.00	\$8,000.00	\$0.00	\$32,000.00
Total Other Contributions:	\$283,072.00	\$283,072.00	\$283,073.00	\$283,071.00	\$0.00	\$1,132,288.00



Cost Allocation Plan

El Dorado County Resource Conservation District

COST ALLOCATION PLAN

The purpose of this cost allocation plan is to summarize, in writing, the methods and procedures that this organization will use to allocate administrative costs to various programs, grants, contracts and agreements.

Direct costs are those that can be identified specifically with a particular final cost objective. Indirect costs are those that have been incurred for common or joint objectives and cannot be readily identified with a particular final cost objective.

Only costs that are allowable, in accordance with the cost principles, will be allocated to benefiting programs by the El Dorado County Resource Conservation District.

The general approach of El Dorado County Resource Conservation District in allocating costs to particular grants and contracts is as follows:

- A. All allowable direct costs are charged directly to programs, grants, activity, etc.
- B. Allowable direct costs that can be identified to more than one program are prorated individually as direct costs using a base most appropriate to the particular cost being prorated.
- C. All other allowable general and administrative costs (costs that benefit all programs and cannot be identified to a specific program) are allocated to programs, grants, etc. using a base that results in an equitable distribution.

ALLOCATION OF COSTS

The following information summarizes the procedures that will be used by El Dorado County Resource Conservation District beginning June 2014.

- A. Compensation for Personal Services – Documented with timesheets showing time distribution for all employees and allocated based on time spent on each program or grant. Salaries and wages are charged directly to the program for which work has been done. Costs that benefit more than one program will be allocated to those programs based on the ratio of each program's salaries to the total of such salaries (see Example 1). Costs that benefit all programs will be allocated based on the ratio of each program's salaries to total salaries (see example 2).
 - 1. Fringe benefits (FICA, UC, and Worker's Compensation) are allocated in the same manner as salaries and wages. Health insurance, dental insurance, life & disability and other fringe benefits are also allocated in the same manner as salaries and wages.
 - 2. Vacation, holiday, and sick pay are allocated in the same manner as salaries and wages.
- B. Travel Costs – Allocated based on purpose of travel. All travel costs (local and out-of-town) are charged directly to the program for which the travel was incurred. Travel costs that benefit more than one program will be allocated to those programs based on the ratio of each program's salaries to the total of such salaries (see Example 1). Travel costs that benefit all programs will be allocated based on the ratio of each program's salaries to total salaries (see Example 2).
- C. Professional Services Costs (such as consultants, accounting and auditing services) - Allocated to the program benefiting from the service. All professional service costs are charged

directly to the program for which the service was incurred. Costs that benefit more than one program will be allocated to those programs based on the ratio of each program's expenses to the total of such expenses (see Example 3). Costs that benefit all programs will be allocated based on the ratio of each program's expenses to total expenses (see Example 4).

D. Office Expense and Supplies (including office supplies and postage) – Allocated based on usage. Expenses used for a specific program will be charged directly to that program. Postage expenses are charged directly to programs to the extent possible. Costs that benefit more than one program will be allocated to those programs based on the ratio of each program's expenses to the total of such expenses (see Example 3). Costs that benefit all programs will be allocated based on the ratio of each program's expenses to total expenses (see Example 4).

E. Equipment – El Dorado County Resource Conservation District depreciates equipment when the initial acquisition cost exceeds \$5,000.00. Items below \$5,000.00 are reflected in the supplies category and expensed in the current year. Unless allowed by the awarding agency, equipment purchases are recovered through depreciation. Depreciation costs for allowable equipment used solely by one program are charged directly to the program using the equipment. If more than one program uses the equipment, then an allocation of the depreciation costs will be based on the ratio of each program's expenses to the total of such expenses (see example 3). Costs that benefit all programs will be allocated based on the ratio of each program's expenses to total expenses (see example 4).

F. Printing (including supplies, maintenance and repair) – Expenses are charged directly to programs that benefit from the service. Expenses that benefit more than one program are allocated based the ratio of the costs to total expenses. Costs that benefit more than one program will be allocated to those programs based on the ratio of each program's expenses to the total of such expenses (see example 3). Costs that benefit all programs will be allocated based on the ratio of each program's expenses to total expenses (see example 4).

G. Insurance – Insurance needed for a particular program is charged directly to the program requiring the coverage. Other insurance coverage that benefits all programs is allocated based on the ratio of each program's expenses to total expenses (see example 4).

H. Telephone/Communications – Long distance and local calls are charged to programs if readily identifiable. Other telephone or communications expenses that benefit more than one program will be allocated to those programs based on the ratio of each program's expenses to the total of such expenses (see example 3). Costs that benefit all programs will be allocated based on the ratio of each program's expenses to total expenses (see example 4).

I. Facilities Expenses – Allocated based upon usable square footage. The ratio of total square footage used by all personnel to total square footage is calculated. Facilities costs related to general and administrative activities are allocated to program based on the ratio of program square footage to total square footage (see example 5).

J. Training/Conferences/Seminars – Allocated to the program benefiting from the training, conferences or seminars. Costs that benefit more than one program will be allocated to those programs based on the ratio of each program's salaries to the total of such salaries (see Example 1). Costs that benefit all programs will be allocated based on the ratio of each program's salaries to total salaries (see Example 2).

K. Other Costs (including dues, licenses, fees, etc.) – Other joint costs will not be allocated on a basis determined to be appropriate to the particular costs.

Example 1

Expense Amount = \$5,000

Costs that benefit two or more specific programs, but not all programs, are allocated to those programs based on the ratio of each program's personnel costs (salaries & applicable benefits) to the total of such personnel costs, as follows:

Grant	Personnel Costs	Percent	Amount Allocated
A	\$ 20,000	20%	\$1,000
C	\$ 30,000	30%	\$1,500
E	\$ 50,000	50%	\$2,500

Example 2

Expense Amount = \$10,000

Costs that benefit **all** programs are allocated based on a ratio of each program's personnel costs (salaries & applicable benefits) to total personnel costs as follows:

Grant	Personnel Costs	Percent	Amount Allocated
A	\$ 20,000	20%	\$1,000
C	\$ 30,000	30%	\$1,500
E	\$ 50,000	50%	\$2,500
Total	\$100,000	100%	\$5,000

Example 3

Expense Amount = \$4,000

Costs that benefit two or more specific programs, but not all programs, are allocated to those programs based on the ratio of each program's expenses (direct costs other than salaries & benefits) to the total of such expenses, as follows:

Grant	Personnel Costs	Percent	Amount Allocated
A	\$ 20,000	20%	\$1,000
C	\$ 30,000	30%	\$1,500
E	\$ 50,000	50%	\$2,500
Total	\$100,000	100%	\$5,000

Example 4

Expense Amount = \$8,000

Costs that benefit **all** programs will be allocated based on a ratio of each program's salaries to total salaries as follows:

Grant	Personnel Costs	Percent	Amount Allocated
A	\$ 20,000	20%	\$1,000
C	\$ 30,000	30%	\$1,500
E	\$ 50,000	50%	\$2,500
Total	\$100,000	100%	\$5,000

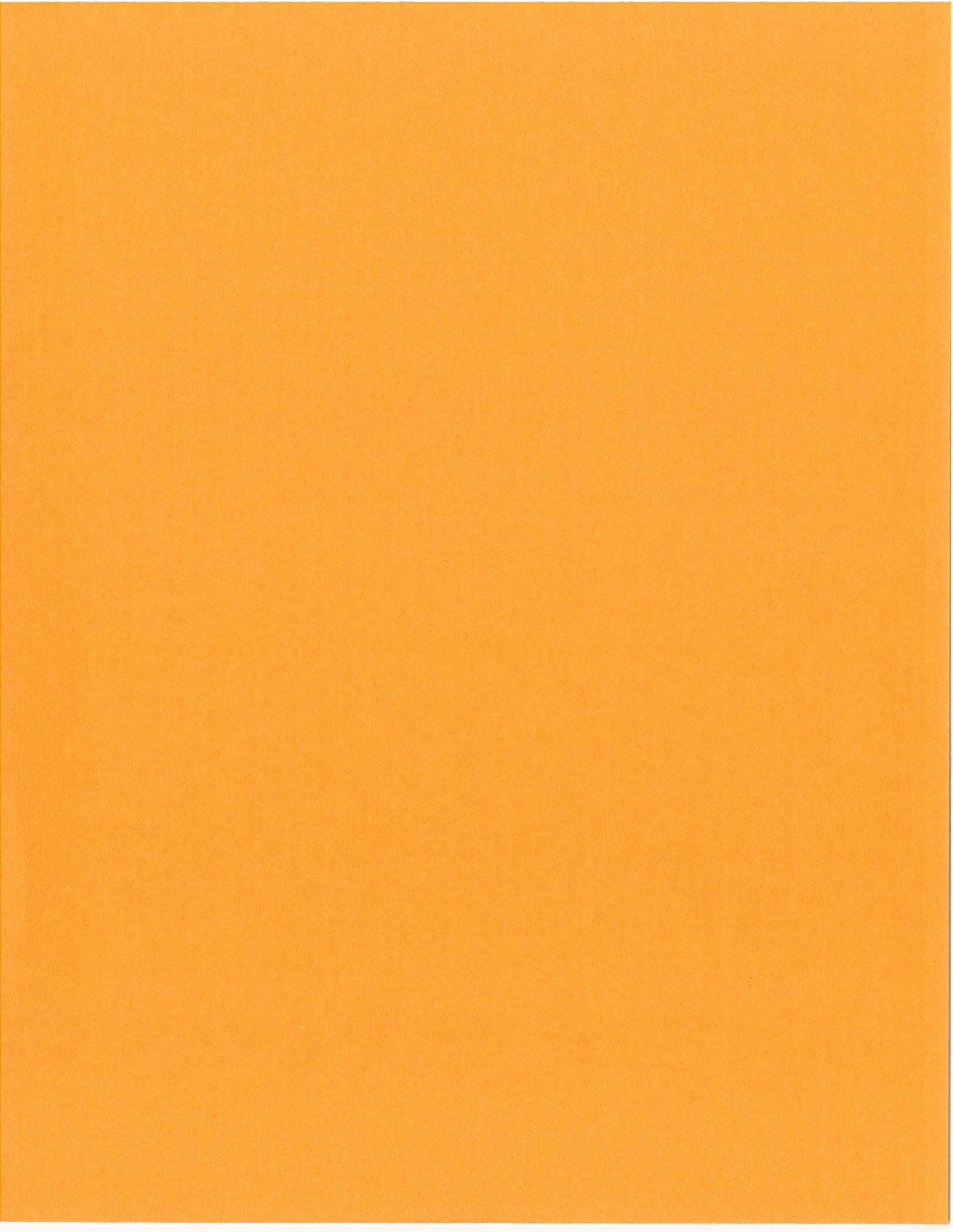
Example 5

Facilities Expense Amount = \$10,000

Facilities costs are allocated based on square footage. Square footage for each program and general and administrative activity is considered in the analysis. General and administrative facilities costs are further allocated to each program based on the square footage of each grant program to the total square footage of all grant programs. The calculation is as follows:

Grant	Personnel Costs	Percent	Amount Allocated
A	\$ 20,000	20%	\$1,000
C	\$ 30,000	30%	\$1,500
E	\$ 50,000	50%	\$2,500
Total	\$100,000	100%	\$5,000

Grant	Personnel Costs	Percent	Amount Allocated
A	\$ 20,000	13%	\$1,300





United States
Department of
Agriculture

Forest
Service

Eldorado National Forest
Placerville Ranger District

4260 Eight Mile Road
Camino, CA 95709
530-644-2324 (Voice)
530-647-5314 (TTY)

File Code: 1560

Date: October 17, 2013

Sierra Nevada Conservancy
11521 Blocker Dr., Ste. 205
Auburn, CA 95603

To whom it may concern:

This letter documents my support and partnership with the El Dorado County Resource Conservation District's grant proposal for the purpose of accomplishing important restoration activities within the Raintree Forest Health Project area.

Sincerely,

DUANE A. NELSON
District Ranger

cc: Tim Howard, Mark.Egbert





California Forestry Association
1215 K Street, Suite 1830
Sacramento, CA 95814
(916) 444-6592 fax (916) 444-0170
e-mail: cfa@foresthealth.org web site: www.foresthealth.org

January 4, 2012

Jim Branham
Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

Re: Sierra Nevada Conservancy – Prop. 84 Forest Health Grant Proposal

Dear Jim,

The California Forestry Association (CFA) supports the ***Raintree project*** on the Placerville Ranger District, Eldorado National Forest, near Capps Crossing on the North Fork of the Consumnes River. This project will provide fuels reduction and forest health treatments on over 9,000 acres.

Sincerely,

STEVEN A. BRINK
Vice President-Public Resources
California Forestry Association
1215 K St., Suite 1830
Sacramento, CA 95814

steveb@foresthealth.org
(916) 208-2425



El Dorado Union High School District
OAK RIDGE HIGH SCHOOL

A California Distinguished School
No Child Left Behind - Blue Ribbon School

1120 Harvard Way, El Dorado Hills, California 95762
 (916) 933-6980 or (530) 677-4402 Fax (916) 933-6987

October 17, 2013

Sierra Nevada Conservancy
 Mr. Jim Branham, Executive Officer
 11521 Blocker Drive, Suite 205
 Auburn, CA 95603

El Dorado Union High School District

Dear Mr. Branham,

I am writing this letter to voice my support of the El Dorado County Resource Conservation District's grant application to the Sierra Nevada Conservancy (SNC) for funding to support the Raintree Forest Health Project under your Proposition 84 grant program.

I attended a field tour of the project area on September 22, 2013, and was impressed by the scale of the project and the importance of the work that is planned. As an educator, not only do I see the value of this project in terms of what it will accomplish for watershed improvement, I also see it as a teaching opportunity for students, educators, natural resource professionals, and the general public. If completed as proposed, it will serve as an outstanding model for other areas of the Sierra Nevada that are in desperate need of forest management.

The Raintree project utilizes a multi-party monitoring program called the Watershed Education Summit (WES). High School students from 6 local High Schools conduct watershed monitoring activities during a week-long event. For the past 15 years, representatives from the USFS, RCD, NRCS, CALFIRE, Trout Unlimited and AmeriCorps have collected data used to evaluate forest management practices and their associated effects on forest and aquatic habitats.

Many students have gone on to work in the natural resources management field. Some are working in this region. This opportunity cannot be replicated and is consistent with the standard curriculum being taught throughout California.

I strongly encourage the SNC to support this proposal. Please feel free to contact me if you need any additional information.

Thank you,

Stan Iverson
 Oak Ridge High School
 Watershed Education Summit

"A Place of Teaching and Learning"



United States
Department of
Agriculture

Forest
Service

Pacific
Southwest
Research
Station

Sierra Nevada Research Center
1731 Research Park Drive
Davis, CA 95618
(530) 759-1700
Fax: (530) 756-7682

January 12, 2012

Malcolm North
Research Ecologist
mnorth@fs.fed.us
530-754-7398

I fully support the application by Tim Howard to the Sierra Nevada Conservancy for funds to help implement The Raintree Forest Health Project. I've been involved with Raintree for more than two years attending meetings, field trips and discussions about the project. As the lead author of PSW-GTR-220 "An ecosystem management strategy for Sierra mixed-conifer forests", I believe the Raintree project is an innovative implementation of many concepts in the paper.

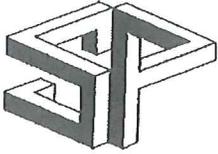
For more than two decades there has been conflict and litigation over forest management practices in the Sierra Nevada, stalling many fuels treatment projects and leaving forests susceptible to high-severity wildfire. The Raintree Project, however, has consistently had support from a range of stakeholders including environmental organizations and private forestry. It has actively engaged public participation since its inception. Raintree uses many concepts from GTR 220 to increase forest heterogeneity in an effort to make forests more resilient to changing climate conditions while providing essential habitat for wildlife, including sensitive species such as the California spotted owl. It is this innovative approach that has helped create broad support for the project and an eagerness to learn how forest practices may be improved in the Sierra Nevada. The Raintree project can help bridge conceptual strategies and management prescriptions to provide forest and fuel officers with the information they need to more widely apply much-needed fuels treatments in Sierra Nevada forests.

I wholeheartedly support Tim Howard's application for prop 84 funding and looking forward to working with and learning from Raintree's implementation.

Sincerely,

Malcolm North





Sierra Pacific Industries

1445 Hwy. 65 • Lincoln, California 95648 • (916) 645-1631

January 18, 2012

Sierra Nevada Conservancy

RE: Raintree Forest Health Project

To Whom It May Concern:

Sierra Pacific Industries (SPI) wishes to go on record as being in full support of the planned Raintree Forest Health Project on the Placerville Ranger District, Eldorado National Forest. As planned, this project is very worthy of Proposition 84 Grant \$\$\$.

SPI owns and manages several thousand acres of forest lands within the boundaries of the Eldorado National Forest and therefore is a neighbor and has an interest in seeing active fuel reduction work being performed on USFS lands in this area. This project has the necessary scale (~9,000 acres to be treated) and intensity needed to truly have an impact on future fire behavior. Treatments to be used: mechanized forest thinning followed by machine piling/burning and broadcast burning have been proven to be an effective and cost efficient means of reducing potential for future catastrophic fires.

SPI operates nearby forest products manufacturing facilities in Lincoln, Oroville, Chinese Camp, and Sonora, which are in need of commercial timber that will be generated by this project. Dollars paid for commercially valuable products generated by the project work together with other funding to stretch fuel reduction budgets to allow for even more acres to be treated.

The final plus for this project is the shot in the arm it would provide local small business concerns and the ripple effect it would have on the local communities. The fuel reduction work performed on the ground would be performed by local small businesses including logging contractors, road contractors, and forest labor contractors that would all be helped by the availability of this work.

Large stand-replacing forest fires pose the greatest risk to the environment in the Sierra Nevada. Impacts to water quality, wildlife habitat and forest health have all been seen as a result of recent large fires in this area like the Cleveland, Fred's, Power and Star Fires. Projects like this could go a long way toward maintaining healthier, more sustainable, and fire resilient forests in El Dorado County.

Sincerely,

David C. Harcus
SPI-Lincoln



El Dorado County Fire Safe Council

P.O. Box 1011

Diamond Springs, CA 95619

Phone: (530) 647-1700

Email: board@edcfiresafe.org

Website: edcfiresafe.org

"Public and Private Partners Working Together to Protect People, Homes, and Natural Resources"

January 15, 2012

U.S.D.A. Forest Service
Tim Howard, Timber Management Officer
Placerville Ranger District
4260 Eight Mile Road
Camino, CA 95709

Re: U.S.D.A. Forest Service, Proposition 84 "Raintree Forest Health Project" Letter of Support

Dear Mr. Howard,

This letter is in support of the U.S. Forest Service Proposition 84 application for grant funding for the "Raintree Forest Health Project" through the Sierra Nevada Conservancy. The El Dorado County Fire Safe Council view is that fire preventative and restorative activities associated with fuel reduction, re-establishing sustainable landscape and improving road conditions will promote the overall health and sustainability of the El Dorado National Forest. With its vast ecosystem that at times is compromised, human intervention is required to protect its watersheds, hydrologic regions, and many diverse species of flora and fauna. The treatment and management activities outlined in the project will assist in the reduction of catastrophic wildfire events, the weakening of the forest due to overgrowth and pestilence, and better adaptation to climate change and population growth. Additionally, the project will provide the potential for positive economic growth in regards to recreation, manufacturing, and the availability of future jobs. As a whole, this project has the potential of accomplishing these objectives and much more.

We, the El Dorado County Fire Safe Council, support this project and would like to review with U.S.F.S., the possibility of establishing a cooperative public outreach arrangement to promote a 'firesafe' message throughout our regions. A coordination effort of this type can benefit both of our organizations and will compliment each other in purpose as well as in efforts. By joining together, we can share this common message to increase public awareness in a way that can be leveraged by both of our respective organizations' defensible space and fire safety programs.

We fully support the proposed "Raintree" project for positive consideration and project award. We look forward to our ongoing and partnering relationship with U.S.F.S. and our other related projects today and in the future.

Very truly yours,

A handwritten signature in blue ink that reads "Richard Krek".

Richard Krek, Chairperson
EDC Fire Safe Council



January 17, 2012

Sierra Nevada Conservancy
Mr. Jim Branham, Executive Officer
11521 Blocker Drive, Suite 205
Auburn, CA 95603

Dear Mr. Branham,

I am writing this letter to voice my support of the US Forest Service's grant application to the SNC for funding to support the Raintree Forest Health Project. I attended a field tour of the project area on September 22, 2011, and was impressed by the scale of the project and the importance of the work that is planned.

As a forest educator, not only do I see the value of this project in terms of what it will accomplish on the ground, I also see it as a teaching opportunity for students, educators, natural resource professionals, and the general public. If completed as proposed, it will serve as an outstanding model for other areas of the Sierra Nevada that are in desperate need of fuels treatment. The El Dorado Forestry Challenge is based very near the project location, and I hope to be able to take Forestry Challenge participants on a field tour of the area.

Please support the Raintree Forest Health Project with a grant from the Sierra Nevada Conservancy.

Thank You,

Diane Dealey Neill
Executive Director



Sierra Forest Legacy

Protecting Sierra Nevada Forests and Communities



January 20, 2012

Sierra Nevada Conservancy
11521 Blocker Dr., Ste. 205
Auburn, CA 95603

Re: Grant Application for Raintree Forest Health Project

Dear Sir/Madam,

Sierra Forest Legacy would like to express its support for the U.S. Forest Service (USFS) Raintree Project joint application with NRCS for Category 2 Healthy Forests Grant Program from Sierra Nevada Conservancy. This project will provide a statewide example of how local agencies and entities can work with their adjacent federal land partners in managing and maintaining healthy forests for all California residents. In doing so, such projects will help ensure safe and reliable water supplies as outlined in the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84).

Sierra Forest Legacy has been actively engaged in the design of the Raintree Forest Health Project (3,400 acres of natural stands and plantations) on the Placerville Ranger District for nearly two years. The targeted areas of the watershed are in need of vegetation restoration, fuels reduction, meadow restoration, Aspen restoration, road reconstruction and closing 47 miles of unneeded roads and 9,000 plus acres of prescribed fire. This effort will help limit uncharacteristic fires and the associated watershed damage.

This project is located in the Cosumnes River watershed and impacts drinking water for El Dorado County residents and a vibrant trout fishery. Impacts from a large, uncharacteristic fire on the highly erosive, granitic soils would likely have unwanted significant impacts on the public water supply that traverses this landscape and would increase sedimentation in a highly valued recreational trout fishery.

We are request your consideration for full funding of \$344,668.00 to RCD and USFS to allow this important project to move forward.

Sincerely,

Craig Thomas, Executive Director
Sierra Forest Legacy
P.O. Box 244
Garden Valley, CA 95633